

GCE Physical Education - Exemplar Material

6PE04

Task 4.1 – Development Plan (netball)

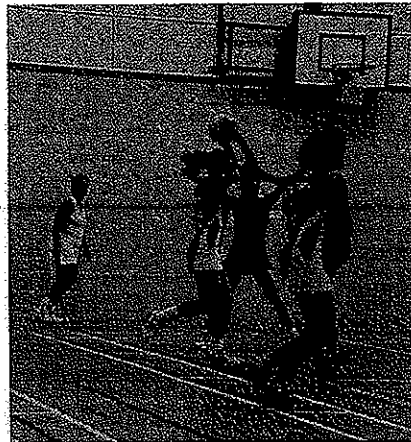
Commentary

This task was well completed inline with the expectations derived from the assessment criteria. The plan was appropriate - extensive applying of sports science principles and factual detail. The student fully covered all the research and planning considerations and undertook a thorough training programme despite some injuries. There was inclusion of sensible sports diet considerations and modifications and all training was accurately recorded and well presented. The candidate completed all training sessions using an appropriate warm up and cool down, while testing was evidence of completion of the plan along with a thoughtful review and evaluation.

Mark – 38/15

Planning & Research: 20, Performing & Recording: 13,
Review & Evaluation: 5

A PHYSIOLOGICAL DEVELOPMENT PLAN TO ENHANCE MY ACCELERATION & POWER IN NETBALL



CENTRE NUMBER:

CANDIDATE NUMBER:

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PLANNING & RESEARCH

Introduction:

My name is Suzy Russell and I am undertaking an 8 week development plan in order to improve my performance in netball by enhancing my acceleration and power. I began playing netball at the age of 7 and my love for the sport grew immensely when my family relocated to Australia for a period of four years when I was nine. I am currently playing U19 south regional netball, for Trinity. I captained my school 1st VII last year and will again this year. I also represent the senior Trinity team at times, playing in poly-league games and tournaments. Last year I was involved in the England development pathway and hope to become involved again in the near future.

My near future aim in netball is to play in the National Talent League level however my knee injuries may greatly restrict my ability to do so. My speed / acceleration are what I believe to be a weakness in my game, and therefore are components that I need to improve in order to reach the next level. Over the course of the past 18 months I have become more aware of the need for me to improve my acceleration and power in order to keep up with the ever quickening pace, intensity and physicality of modern netball. I believe this could significantly improve my performance and allow me to reach my goal of playing netball at the next level.

My main positions are; WD, C and GD. However for school I often play many different positions. At the highest level of netball I play, I am primarily as a mid-court player, acceleration and power are important components of my game, they can improve my ability to outpace or move from an opponent to get free and make an interception.

I plan to improve my acceleration and power through the use of; SAQ (speed, agility, quickness), weights and sprint/interval training, over a period of 8 weeks.

In order to see my improvement and check whether my development plan is improving my acceleration and power and at what rate I will need to test; before I complete the programme, at a mid-point during the programme and at the end of the programme.

In order to improve there are numerous factors which need to be controlled, changed and monitored in order to ensure I get the most out of my programme and develop and improve as much as possible during the 8 week period. These factors include; warming up, cooling down and recovery, diet and fuelling, the principles of training, periodisation and protocols of training and testing.

My Physique:

Weight: Beginning of programme – 65.8k

Height: 1.75m

Body fat %: Beginning of Programme – 17%

Knee injury and physiotherapy:

I am currently seeing a physio for injury of my knees, I complete additional exercises in order to ensure my core strength is as strong and my ligaments, tendons and muscles are all loose enough to not cause severe pain and place excess pressure on my joints. There is currently no specific diagnosis

of my knee problems, 'jumpers knee', patella tendonitis and anterior tibial knee pain have all be explored and I am still under ongoing physio treatment in hope to resolve and reduce the impact of the problem. This restricts my ability to complete some ranges of movement and specific movements aggravate the pain, therefore throughout my programme I need to be especially aware of this and avoid any exercises which particularly stress my knees and cause increased pain.

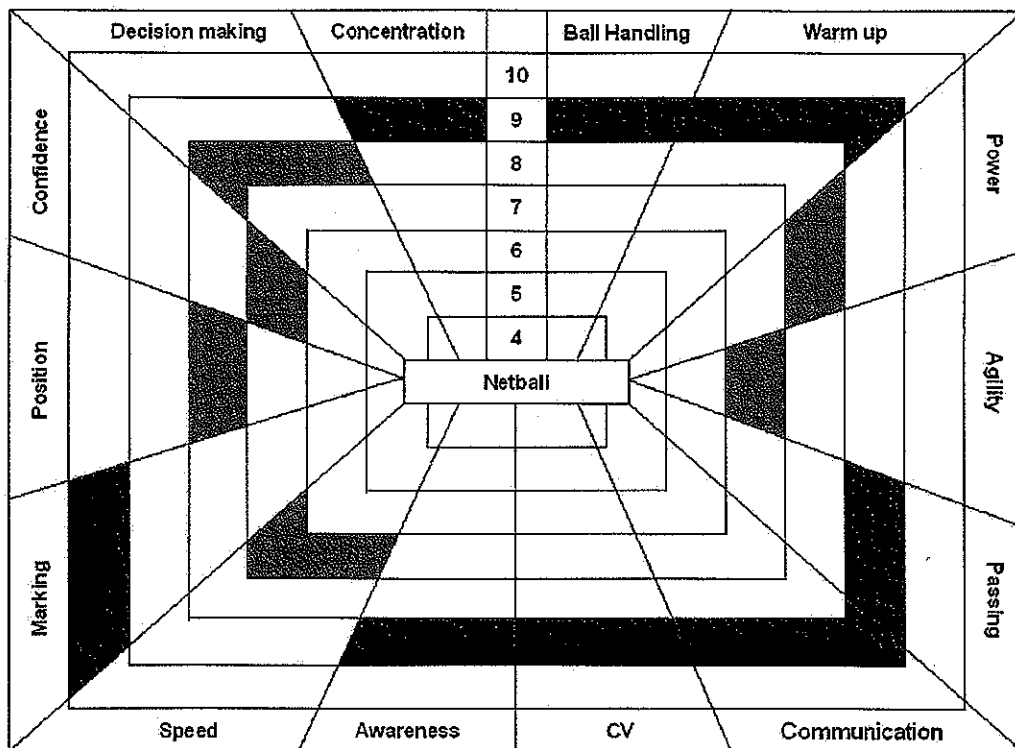
Physical activity readiness questionnaire:

In order to complete my development plan I needed to complete a Physical Activity Readiness Questionnaire (PARQ) to ensure it was safe for me to train and was not going to negatively affect my health. Below is my completed PARQ:

1. **Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor? – No**
2. **Do you feel pain in your chest when you take part in physical activity? –No**
3. **In the past month have you had chest pain when not taking part in physical activity? – No**
4. **Do you ever lose your balance because of dizziness or ever lose consciousness? – No**
5. **Do you have a bone or joint problem that could be worsened or adversely affected by a change in your current physical activity? – My knee pain tends to be aggravated and made worse by large amounts of exercise**
6. **Is your doctor currently prescribing drugs for blood pressure or a heart condition? – No**
7. **Do you know of any other reason why you should not take part in physical activity? – No**

Strengths and weaknesses:

In order to decide upon what I wanted to complete my development plan on I assessed my strengths and weaknesses. Below is a performance profiling chart which visually outlines some aspects of my game as strengths and weaknesses.



This shows that physiologically I am strongest in the areas of cardiovascular fitness, concentration ball handling, ability to warm up, passing, communication, awareness and marking are all strengths of my game. I have outline power, agility, speed, positioning, confidence and decision making as weaknesses and as a result decided to improve my power and acceleration in order to eliminate this as a weakness and hopefully turn these aspects into a strength of my game.

Technically, tactically and psychologically there are areas which I believe I could improve on, such as confidence and decision making, however throughout my development plan I am to improve a physiological aspect of my game, hence my decision to improve power and acceleration.

Definition of related components of Fitness:

Acceleration: the rate of change of velocity. It is a vector quantity possessing both magnitude and direction. (Acceleration = change of velocity / time)

Power: The ability to exert maximum muscular contraction instantly in explosive bursts of movements (strength x speed)

Reaction Time: The time taken from the presentation of the stimulus to the execution of the necessary subsequent action

Although there are many technical aspects of my game which need to be continuously improved in order to ensure my game is up to a high standard, I feel that acceleration and power are the components which is limiting my chances of reaching the next level and therefore I have chosen to improve it with this development plan.

Methods of Training:

In order to improve my acceleration and power I am going to use a combination of SAQ, weights and interval/speed training. All of these training methods should work cohesively to improve the aspect of my game which I believe to be the weakest.

Speed, Agility Quickness: is a method that is patented by SAQ International and the method is used in many countries including the United Kingdom, United States of America and Australia. The method concentrates on the neuromuscular system and developing and honing the neurological firing patterns, connecting the brain and the muscles to allow the body to work more efficiently. The aim of the training is to improve the neuromuscular system and therefore allow the initial movement to be more automatic and efficient, leading to more explosive and precise actions. The use of horizontal ladders and concept of 'quick feet' encourages the brain to send more frequent messages to the muscles. Explosive training and resisted and assisted running aim to improve power and explosive muscle contraction.

Speed training: Involves attempting to improve the rate at which muscles fibres contract once they are stimulated. The neuromuscular system also aims to improve the firing patterns of fast-twitch muscle fibres, Improvement in neuromuscular transmission will result in faster recruitment of contracting fibres. Placing extra stress on muscle fibres through speed and acceleration training will encourage the use of more fibres and therefore the use of speed training will help to improve my acceleration, speed and power. Assisted speed training and resisted speed training can also improve stride frequency and speed / stride length.

Interval training: consists of the idea of periods of work interrupted by periods of rest. A work/rest ratio is created depending upon the intensity of work in the work period. During the work phase I must work to near my maximum capacity to benefit from the training and give myself enough time to recover fully in the rest period, allowing me then to work again at a very high intensity.

Weight / Resistance Training: is a predominately anaerobic, it can improve many aspects including power and therefore as a result acceleration and power. Free and fixed weights can allow me to target different muscle groups. It is important to find the correct balance in order to benefit my speed and acceleration, the intensity and duration and therefore important. I will gain dynamic strength and increase my power and as a consequence increase my ability to accelerate.

Anaerobic Training: My training will stress the ATP-phosphocreatine (PC) system (the alactic energy system) and the Lactic Acid system, both of which are anaerobic. Therefore my training programme should improve my anaerobic threshold and therefore be able to work for longer anaerobically. Anaerobic training will bring result in the following adaptations:

- My body's ability to convert lactic acid into pyruvic acid will be increased by enabling my body to build up greater quantities of the enzymes used in the process
- Improve my ability to utilise lactic acid
- Increase my ability to buffer lactic acid and therefore convert, transport and break down lactic acid
- Increase my ability to tolerate high levels of lactic acid

The adaptations of my body to anaerobic training will also include:

- Increased thickness of my ventricular myocardium
- Increased strength of ventricular contraction
- Decreased end systolic volume
- Increased stroke volume
- Myofibrillar hypertrophy
- Increased muscle mass

All of the adaptations that my three types of anaerobic training will bring about will benefit my ability to accelerate and my power and as a consequence improve my performance as a player. In games it will provide me with the ability to beat opponents and play to a better standard. The improvements should also allow me to train harder and faster and therefore concentrate on technical aspects of my game, e.g. passing, whilst completing drills to a higher intensity.

Principles of training:

The principles of training include; Specificity, Progression, Overload, Reversibility / Regression, Tedium, Threshold, Variance, Frequency, Intensity, Time and Type. I need to apply them to my development plan in order for it to be successful and improve my performance long term.

Specificity:

This revolves around the idea that the training needs to be specific to the aspects you aim to improve and the exercises are specifically tailored to suit the individual and what they aim to achieve. SAQ training, Speed training and weight / resistance training all to be successful are required to be very specific, with the reps, sets, distances and weights being important. The programme also needs to be specific to the athlete, their other commitments and needs to be successful.

Progression:

This involves the idea of increasing the intensity or timing of training to improve, as the body reacts to and adapts to training the loads will need to be increased to ensure there is continuous improvement and a plateau is reached where the training becomes a norm and is not placing any additional stress on the body, and therefore the body does not adapt. I need to increase the intensity of my SAQ and sprint/interval training; which I will do by increasing the number of reps or sets or decreasing the recovery time in between. My weight/resistance training will be progressed by increasing the weights and the number of sets and reps.

Overload:

This principle fits in and works with the idea of progression, and adding increased stress to the body in order to encourage adaptations to occur. Overloading the body and placing more stress on it encourages the body to respond and adapt quicker. However, during my development programme I need to take into account the other training sessions and matches I am doing at the time, e.g. for club and school. If I overload my body to a too greater extent and my recovery periods are not great enough, I will begin to no longer have positive adaptations and my performance may even decrease as a result, resulting in negative effects on the results of my development plan.

Regression / Reversibility:

If I cannot train for a certain reason, e.g. I am impacted by an injury, then the principle of reversibility will occur. Approximately a 1:3 week ratio is applied, for every one week that an athlete didn't train for; it takes a period of three weeks to return to the original state of fitness that the athlete was in before they stopped training. This is therefore something important to consider when undertaking my development plan.

Threshold:

Gauging the correct training threshold is vital in order for my development plan to be successful. I need to work at the correct intensity and time in order to improve. In sprint / interval training I need to ensure the distances, sets, reps and rest intervals correct. With regards to SAQ training the number of sets, and timing of rest intervals will be important as for the training to benefit the exercise must be completed with the correct technique, or it is not worth completing the exercises.

Weight / Resistance training threshold refers to the weight of the resistance, it should be approximately 80-85% of my one rep max.

Tedium:

A large problem associated with training is tedium, the idea of repetitive training becoming boring and the athlete undertaking the programme no longer being motivated. To successfully complete my programme I need to be motivated and avoid tedium; completing some sessions at the same time others who are working towards the same objective of improving their speed / acceleration and listening to music may both help me to avoid tedium and keep me motivated when training.

Variance:

In order to avoid tedium I also need to apply the principle of variance to my development plan. This involves varying my programme to ensure it is not repetitive, I am including three types of training in my programme and therefore this should help to avoid tedium.

Frequency:

This is how often I complete my training, the occurrence of training I aim to complete 4 sessions per week. The frequency of training is important as recovery periods in between training are determined by this. The frequency of training will be influenced by the intensity and the duration of the training completed.

Intensity:

The intensity of each session will be determined by the distances covered, number of sets, reps, rest periods and weights of resistance.

Type:

This refers to the form of training which I will undertake, types of training I will use in my development plan are; weight/resistance training, SAQ and speed/interval training

Time:

The duration of sessions, due to the limits of my timetable most of my sessions will be completed within one hour. Due to this I will be focusing on quality and not quantity, ensuring that all my sessions are completed to my maximum ability.

Setting Goals and Targets:

Throughout my development plan I need to set goals and targets, as my overall plan evolves around the idea of achieving the performance goal of improving acceleration and power. Performance goals are goals which relate directly to the achievement of a performance outcome. In order to achieve these outcome goals, short term and long-term goals need to be achieved throughout my development plan.

SMARTER goal setting:

SMARTER goal setting provides me with shape and a guide to my development.

Specific:

Ensuring goals are clear and concise and therefore what needs to be achieved is very obvious to the athlete. Improving acceleration and power is an example of a specific goal targeting a specific area of my game that will impact upon my overall performance.

Measurable:

Assessing goals through formal processes is important of gauge levels of improvement. If improvement is shown these goals can also motivate individuals to keep training.

In my case this will be testing after mesocycle 1, these results will allow me to critically analyse my training and adjust it in order to make further improvements. From this I will also be able to set realistic targets for improvement before my next testing after mesocycle 2.

Agreed:

Goals should be agreed with others to ensure they are achievable, not dangerous and won't impair the athletes performance long term, I have discussed my goals with both my A level physical education teacher and one of my netball coaches in order to ensure they are appropriate and achievable.

Realistic:

This involves ensuring that goals are genuine and not beyond the scope of the performer. I need to accept that by training over a period of 8 weeks the improvements I make are likely to be of relatively small margins.

Time-bound:

Goals need to reflect upon the short and long-term objective and the progression which is going to be made over time. My development plan is over a period of 9 weeks with a rest week in-between my four week mesocycle; I know and understand the time limitations and the time periods which I have in order to achieve my targets.

Exciting:

In order for goals to be motivating they need to provide the performer with a stimulus to achieve them. The concept of improving my power and acceleration and as consequence my performance is one that excites me. As a consequence therefore I am more likely to achieve my goals as if they are targets which excites the performer the motivation levels will be higher and training will be completed with more enthusiasm, detail and importance applied, increasing efficiency.

Recorded:

Recording goals creates a pathway for development; an agreed and clear structure is more likely to motivate a performer. I am taking and recording results after my first mesocycle, this will further help to create a pathway and guide me in the possible targets I can therefore create set for the final testing once my development plan is complete. These created predictions of improvement are likely to motivate me further during the second mesocycle of training.

Warm up:

Aims of a warm up:

The main aims and objectives of my warm up before completing the training programme in my development programme is to:

- **Prepare my body physiologically and psychologically for performance:** the effectiveness of this is dependent upon how I perform the warm up and the choice of activities, how suited they are compared to the main activity I am going to undertake, the manner in which I carry it out, the time period, and my perceived success of carrying out the warm up.
- **Improve performance:** warming up will allow me to perform my training programme at my optimum level; this will lead to more chance of a successful programme and an overall gain as a result of each training session being performed to my maximal ability.
- **Reduce the risk of injury:** therefore improving my performance as will reduce the chances of me requiring rest periods as result of injury and having to work for 3 weeks in order to regain the fitness levels I had for everyone one week of rest required due to injury.

Stages of a warm up:

Stage 1: Initial preparation: gross motor skills and pulse-raiser:

To begin this stage skills that involve the movement of large body parts or the whole body will be used a combination of this and pulse raising activates will introduce the stress to the body in a gradual way, which reduces the risk of injury. Raising the bodies core temperature and the temperature of specific muscles encourages many physiological responses to occur, e.g. an increased heart rate and stroke volume..

Stage 2: Injury risk prevention:

Mobility exercises can be performed to reduce the risk of injury and increase flexibility through increased localised muscle elasticity. There are many different types of stretching including; static, dynamic, ballistic, proprioceptive neuromuscular facilitation (PNF).

Stage 3: Skill practice:

Involving a skill related component, this may not be applicable for me in my training programme as I am not aiming to improve a skill area of my game.

Stage 4: Sport-specific:

Including practicing specific skills and exertions similar to what will be later experienced in the main activity, for example this may involve completing a set of weights at 40% of the exertion in the main activity or running through SAQ drills at a slower pace

My warm up will vary depending upon the main form of training I am going to undertake in the session. The warm up I will undertake prior to each type of training is outlined below:

Speed, Agility Quickness:

Stage 1: Initial preparation: gross motor skills and pulse-raiser:

- jogging, approximately 5-10 minutes at a relatively slow pace depending upon the temperature and warmth of the environment

Stage 2: Injury risk prevention:

- Dynamic stretches
- Static stretches / Physio stretches

Stage 3: Skill practice:

- Not applicable

Stage 4: Sport-specific:

- Running through light sets of each drill at a slow pace, concentrating on technique and positioning etc

Speed / Interval training:

Stage 1: Initial preparation: gross motor skills and pulse-raiser:

- jogging, approximately 5-10 minutes at a relatively slow pace depending upon the temperature and warmth of the environment

Stage 2: Injury risk prevention:

- Dynamic stretches
- Static / Physio stretches

Stage 3: Skill practice:

- Not applicable

Stage 4: Sport-specific:

- Approximately six short sprints; starting slow, building up to a faster pace, then slowly returning back to a slower pace

Weight / Resistance Training:

Stage 1: Initial preparation: gross motor skills and pulse-raiser: Cross trainer or rowing machine for 5-10 minutes, depending on my body heat and the environment

Stage 2: Injury risk prevention:

- Static / Physio Stretches

Stage 3: Skill practice:

- Not Applicable

Stage 4: Sport-specific:

- One set of light weights, going through the motions of the actions that I will be completing with resistance in the main activity of the session

Stretching:

Stretching increases the elasticity of the muscle and connective tissue, increasing the range of movement at the joint. Increasing the localised temperature of the muscles and elasticity which can therefore aid performance whilst reducing the risk of injury. There are five main types of stretching:

- **Static stretching:** little moment where the stretches are held for up to thirty seconds and the muscles are stretched to a safe limit under control, they are often repeated
- **Dynamic stretching:** controlled movements which take the joints through its full range of movement, making the athlete more prepared as the stretches are more sports specific and realistic. In order to be safe the muscles and joints must be warm before this form of stretching can begin
- **Ballistic stretching:** this method uses the momentum of bouncing to stretch the muscle; this increases the risk of injury and the chances of delayed onset of muscle soreness. Ballistic stretching is specific for many sports, and in some ways rehearses some of the actions I will do whilst completing my SAQ and sprint training sessions, due to the explosive and bouncing movements. In order to be safe, the body must be fully warm before this form of stretching is completed
- **Proprioceptive neuromuscular facilitation (PNF):** an advanced form of flexibility training that is not used in a warm up, involving passive stretching and isometric contractions, increasing flexibility and muscular strength
- **Passive and Active stretching:** passive stretching involves assuming a position and holding it with another part of your body or with the assistance of a partner. Active stretching is actively stretching the muscle yourself

I have chosen dynamic and static stretching as my two main methods of stretching in my warm up in preparation for the main activity of training. I will complete the following stretches:

Dynamic stretches:

- Dynamic Gastrocnemius stretch, High knees, Lunges, Sums (half squat), Arm swings, Grapevine

Static / physio stretches: (with diagrams and explanations)

- Plantar fascia: Sit on floor, bend knee, place heel on the floor. Pull toes upwards:



- Gastrocnemius: Stand with one leg in front of the other, place heel on the floor of behind leg, lean forward into flat wall keeping back leg straight:



- Quadriceps: Stand on one leg, pull the other leg up towards gluteus, ensure knees are together:



- Hip Flexor: One knee on floor and the other in front with a bent knee, keep back upright and push hips forward to enhance stretch:



- Hamstring (standing): One leg in front of other, bend behind leg and place weight on this leg, tilt hips forward:



- Gluteus maximums: Lie on floor on back, bring knee of one leg up towards the opposite shoulder

- Groin (standing): Stand with feet wider than shoulder width apart, transfer weight and lean towards one side of the body bending the weight bearing knee:



- Tricep: place one hand on upper back, with elbow pointing towards the ceiling, with other arm, gently push elbow back:



- Anterior Shoulder: Place hands together behind back, slowly lift hands upwards away from the back:



- Deltoid: Cross one arm across body, using the other arm pull the arm being stretched towards the opposite shoulder:



- Torso stretch: place feet shoulder width apart, twist body and arms in one direction:



Short term responses that come as a result of a warm up:

- Increased heart rate: due to an increase in carbon dioxide which is detected by chemoreceptors which triggers this response
- Increased stroke volume: due to greater pressure in the heart as more blood is being pumped in and out in each contraction at a greater rate, the increased pressure causes a greater elastic recoil and greater contractile force
- Increased cardiac output: increase stroke volume and heart rate results in the volume of blood being pumped from the left ventricle in one minute increasing
- Increased end-diastolic volume: the rate of filling of the heart speed up as a result of the increase in speed of the flow of blood
- Increased venous return: blood is flowing around the body at a greater rate and the contractile force of muscles is greater, pushing deoxygenated blood back towards the heart under more pressure and therefore at a faster speed

- Increased localised and core heat generation: the energy created and is given out in heat and therefore the body temperature increases
- Increased ventilation rate: quicker, deeper and more active breathing results in a greater rate of gas entering and leaving the lungs
- Increased carbon dioxide build up: as a result of an increased rate of respiration
- Increased activity of the sympathetic nervous system: the heart rate is quicken in order to release more carbon dioxide created in respiration, the anticipation of competing or training and increase hormone levels and help to activate the nervous system
- Increased production, utilisation and transportation of lactic acid: the increase in carbon dioxide as a result of increased respiration results in an increase in the transport and removal of lactic acid
- Increased production of synovial fluid: the hyaline cartilage excretes a large amount of synovial fluid as a response, lubricating the joint and reducing stiffness, increasing the range of movement available at the joints
- Increased production and release of adrenaline: contributes to increased heart rate, the fight or flight scenario results in an increase in adrenaline
- Increased muscle elasticity: an increase in heat (due to energy production) results in greater elasticity resulting in greater range of movement at the joint and within the muscle tissue
- Increased speed nerves impulses: the increased temperature of the body increases the efficiency of the biochemical reactions that happen in the body, the speed of thought and neuromuscular contraction speed increases
- Vasodilatation and some blood vessels: allowing a greater flow of blood to the areas which require oxygenated blood, e.g. muscle tissue
- Vasoconstriction of some blood vessels: reduces the flow of blood to areas which do not require a great amount during exercise, e.g. organs
- Vascular shunting: vasodilatation and vasoconstriction results in a greater proportion of blood flowing to parts of the body where there is a higher demand for oxygenated blood
- Decrease in end-systolic volume: greater contractile force results in a greater amount of blood leaving the heart after each contraction
- Thermoregulation begins: the body begins to keep the temperature between certain boundaries so it does not reach extremities of hypothermia or hyperthermia, part of the process of homeostasis
- Localised muscular metabolism speeds up:
- Dilation of capillaries

- Reduced muscle viscosity

The intensity and duration of warm ups:

I need to work at an intensity that will bring about the responses mentioned above so that I can train at my optimum performance and the positive adaptations of my training will be greater. When my warm up objectives have been achieved and I am both physically and psychologically prepared for the activity I am ready to undertake, I will be able to start the activity of my training session.

Cool down And Recovery:

My cool down should help to speed up recovery by performing light, continuous exercise to keep the heart rate elevated.

Purpose of my cool down:

- Keep metabolic activity high
- Keep capillaries dilated: so oxygen can be flushed through the muscle tissue, removing and oxidising any remaining lactic acid
- Prevent blood pooling in veins: avoid causing dizziness
- Bring the heart rate down back to resting rate slowly

How long should the cool down be?

It should last for a relative period of time, depending on the type and intensity of the activity which I have just undertaken. The heart rate is a good indicator of the duration that is required until the cool down is complete.

Stages of the cool down:

- **Decreasing heart rate:** the heart rate should be gradually decreased through slow jogging, swimming, cycling etc
- **Series of stretches:** a period of stretching exercises should facilitate and improve the elasticity of the muscles (as they are still warm)

My cool down:

After I complete my SAQ and sprint/interval training sessions I will cool down by:

- Jogging for approximately 3-5 minutes, gradually decreasing pace, until I feel my pulse has returned to a similar level of beats per minutes as it is at rest
- Complete a series of static stretches as shown in the diagrams above (in the warm up section) including my physio exercise stretches

After completing my weight/resistance training sessions I will cool down by:

- Complete a series of static stretches as shown in the diagrams above (in the warm up section) including my physio exercise stretches

I don't believe that will be a large need for me to complete a pulse decreasing exercise as the activity I am completing in my main session does not require large aerobic or anaerobic exertion and I will be having recovering time between each set, therefore my pulse should not be constantly raised after weights / resistance training and my body will not need to reduce the heart rate.

Lactic acid removal:

More than half the exercise-induced lactic acid is removed within 15 minutes after exercise, and the rest within approximately an hour. Elevated heart and ventilation rates are therefore required for functions other than the removal of lactic acid.

Increased temperature, growth and repair tissues, reloading of energy stores and myoglobin all require oxygen. Respiratory and cardiac muscles will also be working harder along with the heart requiring more oxygen, tissue repair and then redistribution of calcium ions which both require energy and oxygen. Meaning heart and ventilation rates are required to stay elevated

Restoration of ATP, PC and glycogen stores post-exercise:

Post-exercise window for replenishment, fatty foods and simple sugars can be consumed during this period to be converted and used in the process of replenishing ATP, PC and glycogen stores. Replenishment is quicker when complex carbohydrates have been consumed, i.e. the better the quality of carbohydrate digested within the shortest period of time possible the quicker the recovery.

Therefore after completing my individual training sessions I may intake a form of complex carbohydrate, for example a banana to aid the restoration of energy stores and therefore allow me to recover at a greater rate.

Excess post-exercise oxygen consumption (EPOC):

Relates to the elevation of ventilation and heart rate after exercise when compared with previous levels before exercise, repaying oxygen debt. When only a lack of ATP can be produced aerobically, glycolysis will take over as the predominant method of ATP supply resulting in depletion of muscle glycogen and a production of lactic acid. Therefore at some point, when the ATP production through the anaerobic energy system is used up and exercise must stop.

Delayed-onset of muscle soreness (DOMS):

Can be caused by excessive mechanical forces being applied to muscle and connective tissue resulting in muscle soreness the following day, or in later stages of the exercise session. The result of eccentric work, and therefore specifically during my SAQ sessions I will need to be aware of the potential implications on my body and the recovery required.

I can minimise DOMS by:

- Building my training intensity gradually
- Cross training: by completing sessions of SAQ, sprint/interval training and weight/resistance training

Recovery:

The time required for recovery is dependant on the level of stress experienced by the body. Therefore my recovery from each training sessions will vary depending upon the intensity and lengths of the sessions in addition to my current health and tiredness.

There are two main phases to recovery:

- **Fast component:** concerned with the phosphagen stores. Phosphagens are energy storage compounds which are mainly found in muscle tissue, PC and ATP. The restoration process takes up to about four minutes, a portion of oxygen used to resynthesise and restore muscle phosphagen stores (ATP and PC) which I will exhaust during my training sessions. The process is rapid and achieved by mainly the aerobic energy system. Scientifically this process involves the use of three main mechanisms; the use of energy from the aerobic conversion of carbohydrate into carbon dioxide and water- used to manufacture ATP from ADP and PC. Some ATP is then immediately utilised to create PC through the use of a two phase reaction with the first phase providing ADP a Phosphate molecule and energy, and the second converting these products into phosphocreatine. The third mechanism makes a small percentage of ATP which is derived from the production of lactic acid available for phosphagen replenishment.
- **Slow component:** Heat dissipation, energy replenishment, rehydration and the removal of lactic acid are involved in this process. Therefore it is important for me to keep warm, refuel my body and rehydrate my body after training.

Ergogenic acids:

Any external influences that can positively affect physical or mental performance; mechanical, pharmacological, physiological and nutritional.

Ice baths

Popular in contact sports, and as my training programme is individual with minimum contact they should not need to be used to benefit time, however they may be useful after hard training sessions e.g. SAQ for the following reasons:

- Immersion allows controlled even constriction around muscles, closing microscopic damage that cannot be felt, and numbing pain
- physiological reaction provoked by the amount of muscle submerged, body fights back from shock or rapid cold immersion by sending a blood rush that flushes the damage-inflicting waste from your system

There usefulness for me in aiding recovery, is how restricted by the practicality, as the opportunity to have an ice bath after my training sessions is limited

Compression clothing:

For example elastic shorts, tights and vest

The confirmed benefits that I could gain from wearing compression clothing include:

- better muscular alignment and structure
- reduced muscle damage
- improved circulation

- increased awareness of muscle operation
- increase in anaerobic threshold, power and endurance
- Reduce sweat rate by 30%
- Improve performance by reducing the impact of hot / humid conditions on the body's thermoregulatory system, however as my programme is taking place in the winter months when conditions are not warm, this will not be applicable to me as an individual

Diet and Fuelling for my Training:

To ensure my performance in my training sessions I need to successfully adjust my diet to meet the demands. Diet is extremely important to an athlete and it can underpin performance. I will need to consider and manipulate my diet to allow me to; consume adequate volumes and types of food to facilitate my training and recovery processes, ensure energy stores are full before and replenished straight after training sessions, hydrate my body adequately, remain healthy with a strong immune system. In doing this I will be best preparing myself to complete training sessions to the required intensity and standard and therefore improve my long term performance.

There are seven main food groups: Carbohydrates, proteins and fats are 'energy providers' (macronutrients), whereas vitamins, minerals (micronutrients), water and fibre are considered 'non-energy providers'.

Carbohydrates:

Carbohydrates are a critical fuel source for the muscle and central nervous system, and therefore the availability of carbohydrate plays a key role in the performance of exercise.

This includes food such as, pasta, rice, bread, cereal, grains and potatoes. It is the major energy source of the body. Glucose is the basic usable form of carbohydrates in the body, being used directly by the cell for energy, stored as glycogen in the muscle and liver, or converted to fat as an energy store. If the body does not need the glucose then it is converted into fatty acids and glycerol, and stored as triglycerides in adipose tissue and skeletal muscle.

There are three types of carbohydrate; monosaccharides, disaccharides, polysaccharides. Monosaccharides are single molecules; glucose, fructose and galactose e.g. fruit. Disaccharides consist of two molecules together; sucrose and maltose e.g. sweets. Polysaccharides consist of many units of glucose; glycogen and starch e.g. bread. The grams of carbohydrate in some medium portions of food are shown in the table below:

It is recommended that you consume 7-10g of carbohydrate per kilogram of body weight per day. I weigh approximately 67kg so therefore it would be recommended for me to consume 469g of carbohydrate per day, I will not be able to accurately measure and consume these each day but will adjust my diet during my development to consume approximately 500g per day. It is hard to consume the exact amount, however the table below provides a list of portions of food providing 50g of carbohydrate, which I can use and calculate the amount consumed per day:

Food:	Portion per 50g of carbohydrate:
Weet-bix	60g (5 biscuits)
Cornflakes	60g (2 cups)
Porridge – made with milk	350g (1.3 cups)
Bread	100g (4 slice of white)

Muesli bar	2.5
Fruit filled biscuits	5
Pancakes	150g (2 medium)
Ice fruit bun	105g (1.5)
Boiled rice	180g (1 cup)
Pasta or noodles, boiled	200g (1.3 cups)
Bananas	2 medium-large
Orange, apple etc	3-4
Dried apricots	115g (22 halves)
Potatoes	350g (1 very large, or 3 medium)
Sweet potato	350g (2.5 cups)
Baked beans	440g (1 large can)
Milk	1 litre
Flavoured milk	560ml
Flavoured non-fat yoghurt	350g (2 individual tubs)
Ice cream	250g (10 Tbsp)
Rice pudding	300g (1.5 cups)
Chocolate	80g
Jelly babies	60g
Pizza	300g (medium-1/3)
Lasagne	400g serve
Fried rice	200g (1.3 cups)
Fruit juice	500ml
Cordial	800ml
Sports drink	700ml
Sports gels	2 sachets

Liquid meal supplement	250-300ml
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The Glycemic Index is a ranking of the breakdown of carbohydrates into sugars and the time it takes to enter the blood stream, from 0-100, the lower the number the slower the digestion rate. A figure above 70 is generally accepted as high GI, moderate GI is the value between 50-70 and below 50 is considered low GI. I need to take the glycemic index of foods into account when selecting my foods for recovery and to fuel my training, as it is important I am releasing the right amount of carbohydrates (energy) into my body at the right time.

The table below shows some examples of foods that are high, moderate or low GI:

High GI	Moderate GI	Low GI
Glucose	Sucrose	Fructose
Honey	Mars Bars	Chocolate
Jelly beans	Crisps	Sponge cake
Sports drink	Squash	Milk
Bagel	Bread	Fruit cake
Weet-bix	Muesli	All-Bran
White rice	Brown rice	Pasta
Baked potato	Boiled potato	Baked beans
Water melon	Banana	Apple
Parsnip	Sweet corn	Lentils

I am aware and understand the concept and reasons behind carbohydrate loading; this process can be beneficial to athlete before a big event, however as my development plan lasts for 8 weeks, revolves around training and not one 'big event' it is not feasible or appropriate to apply this principle to my training programme.

Proteins:

These are important for growth and repair and also provide energy for extreme cases, however these stores are last resort energy provider. Amino acids are the basic structural unit of proteins, foods that are rich in amino acids (and therefore I need to consume during my development plan) include animal's protein and milk, cereal, cheese, fish, lean meat and liver. Structural proteins are needed to build connective tissue, cell membranes and muscle cells. Regular proteins act as enzymes and as a form of transport. There are 20 different amino acids, though in the body we can't make

the nine essential ones, therefore it is important to consume these foods during my training programme, especially as some are used as a minor fuel source during physical activity.

There is research to support the fact that adolescents have additional protein requirements, and that there is a slight increase in the requirement for athletes.

The estimated protein requirements, according to the Australian Institute of Sport are show in the table below:

Group	Protein intake (grams per kilogram of body weight per day)
Sedentary men and women	0.8-1.0
Elite male endurance athletes	1.6
Moderate-intensity endurance athletes	1.2
Power sports e.g. rugby. Australian rules football	1.4-1.7
Resistance athletes (early training)	1.5-1.7
Resistance athletes (steady state)	1.0-1.2
Female athletes	-15% lower than male athletes

As I am completing a training programme including power, and resistance training (early stages) I need to consume approximately 1.1 grams of protein, per kilogram per day to sufficiently meet the demands. As I weigh approximately 67kg I need to consume approximately 73g of protein per day. It is important for me to consumer enough protein regularly as insufficient protein may cause muscle to be broken down to ensure supply of amino acids to the body, leading to a loss of strength and power (aspects which I am trying to improve) in addition to general negative effects upon training performance.

I will get my protein from sources of protein rich food. The table below includes some forms of this which provides approximately 10g of protein:

Food:	Portion per 10g of protein:
Small eggs	2
Reduce fat cheese	30g
Low fat milk	250ml
Lean chicken	40g
Grilled fish	50g

Canned tuna	50g
Reduced fat yoghurt	200g
Wholemeal bread	2 slices (120g)
Wholegrain cereal	3 cups (90g)
Cooked pasta	2 cups (330g)
Cooked rice	3 cups (400g)
Baked beans	200g

The timing of the consumption of protein is important but can also be difficult for an athlete to perform correctly. The importance of protein for recovery is important, and muscle and body protein metabolism, is a contact balance between protein break down and rebuilding, during training the balance will be towards protein breakdown and during recovery and protein consumed the balance tips towards protein rebuilding. Research suggests that the effects of post-exercise protein intake after exercise are best if the protein is consumed with a form of carbohydrate, due to its insulin stimulating ability encouraging the muscles to take up amino acids, for example flavoured yoghurt, a milk drink or cereal bar.

Fats:

Fat provides insulation and protection to vital organs such as the heart lungs etc and helps transports vitamins throughout the body. It also provides the body with energy in the later stages of aerobic activity for example marathon runners are reliant upon the complete combustion of fats to glucose to provide them with energy to complete the race once their glycogen have been depleted.

Are present in the body as triglycerides, fatty acids and cholesterol. Basic structure of triglycerides; one molecule of glycerol and three molecules of fatty acids. A free fatty acids that has its carbons saturates with hydrogen is known as 'saturated', a large amount of these can lead to high blood pressure and cholesterol levels, therefore I need to avoid consuming these in great amounts. Unsaturated fats don't have their carbon atoms saturated with hydrogen, these are liquid at room temperature for example vegetable oils – I should consumer a greater amount of these then saturated fats to make up my intake as they are healthier in the long term for my body.

There are two forms of fats available to the muscles during exercise; free fatty acids (from adipose tissues) and triglycerides (within muscle cells). The speed of the synthesis and breakdown of fats is dependant upon the concentration of fatty acids, determined by mainly the uptake of free fatty acids and triglycerides. During low energy production (when I am not being active) the supply of fatty acids consumed will lead to an increase in fatty acid concentration in the cell. When energy requirement increasing (active, e.g. in a training session) the stored fatty acids will be used in energy production, resulting in a decrease in fatty acid concentration, then stimulating the break down of triglycerides into glycerol and free fatty acids to compensate, this process is caused by hormones.

As my development programme is focused largely around anaerobic training, the amount of fat I need to intake will be smaller compare to the amounts of protein and carbohydrates as the conversion rates of fats to glucose is not quick enough to provide energy in short bursts of intense anaerobic activity.

Minerals:

These provide the structure for forming bone and teeth. They also assist with muscular contraction, maintaining the normal rhythm of the heart and control the acid-base levels, which effects enzyme activity, vital to many of the body systems and processes.

Sodium, calcium, phosphorous, potassium, iron and magnesium are amongst the many minerals that are required in small amounts per day, the above are considered more vital and can have a greater effect on performance if the right amounts are not consumed at the right time.

Calcium is important and is require for muscle contraction, blood vessel expansion and contraction, secretion of hormones and enzymes and the transmission of nervous impulses. It is ideal for the body to maintain a concentration of calcium in the blood, muscle and intercellular fluids, however most of the body's calcium supply is stored in the bones and teeth. The recommended intake per day for a female between the ages of 14-18 is 1300mg. The table below shows the amounts in certain amounts of food:

Food	Mg of calcium contained:
Plain, low fat yoghurt, 230g	415
Cheddar cheese, 42g	306
Semi-skimmed milk, 230g	297
Orange juice, 170g	200
Vanilla ice cream, ½ cup	85
Sour cream, 2 tablespoons	32
Tortilla wrap	37

Sodium helps to maintain the water balance in cells and the function of nervous impulses and muscles as well as influencing the acid-base levels to maintain normal cellular activities. Sodium is lost in sweat and it is vital to replace it. Sports drinks containing electrolytes are often consumed to replace these minerals which are excreted during exercise. The recommended sodium amounts for males is 110mg and females 330mg.

Iron is particularly important as it is required for key functions in the body; it is an important component of haemoglobin and myoglobin, which transport oxygen in the blood and muscles. It is also involved in the electron transport system, and therefore the production and release of ATP, it is required for red blood cell production and a healthy immune system. It is important to someone completing high levels of training as it can impair aerobic metabolism through the decreased rate of delivery of oxygen to the muscles, and therefore the ability for the athlete to work at intensity for long periods of time.

Iron is an important mineral and is required as the body is unable to manufacture iron, iron is distributed in the food we eat; however some sources provide greater amounts than others. Iron absorption max is (15-18%) in foods that contain haem iron, absorption from foods which contain non-haem iron is lower (5%) sources and amounts of both are outlined in the table below:

Food – haem iron	Serve	Iron (mg)
Liver	10g cooked	11.0
Beef	100g cooked	4.0
Chicken	100g cooked	1.2
Fish	100g cooked	0.6-1.4
Salmon	100g	1.5
Food – non haem iron		
Eggs	100g	2.0
Breakfast cereal	30g (1 cup)	2.5
Sultanas	50g	0.9
Dried apricots	50g	2.0
Wholemeal bread	60 g (slices)	1.4

Iron is particularly important as it is required for key functions in the body; it is an important component of haemoglobin and myoglobin, which transport oxygen in the blood and muscles. It is also involved in the electron transport system, and therefore the production and release of ATP, it is required for red blood cell production and a healthy immune system. It is important to someone completing high levels of training as it can impair aerobic metabolism through the decreased rate of delivery of oxygen to the muscles, and therefore the ability for the athlete to work at intensity for long periods of time.

The following table provides the recommended daily intake of Iron:

Age	Males	Females
9-13years	8mg/day	8mg/day
14-18years	11mg/day	15mg/day
19-50years	8mg/day	18mg/day

However during my development plan my needs for iron will increase further as I will have high requirements of iron. The need is higher during growth, as an increased red blood cell mass results in higher needs training should increase my red blood cell mass. I will have increased losses of iron due to loss in sweat and impact (from mechanical trauma from both contact with the floor due to running, bounding, jumping etc, and collisions during matches with other players and the floor) resulting in increased red blood cell destruction.

Vitamins:

There are 13 different vitamins that have been identified, which together are responsible for blood clotting, neuromuscular function, healthy teeth and bones, healthy skin and numerous bodily functions.

Fat soluble vitamins, A, D, E and K are absorbed with fat from the intestine into the circulatory system, where they are carried to the liver and stored. Vitamin E is distributed in the body's fatty tissues

Water soluble vitamins, B and C are stored in the body's fat tissue for very short periods before they are excreted by the kidneys, they therefore need to be consumed daily. Vitamin B12 is an exception to this and is stored in the liver.

Vitamin:	Sources:	Use and results of deficiency:
A	Dairy products, eggs, liver, green vegetables and carrots	Maintain health of the epithelium, aids retinas dark adaption ability
B1 (thiamine)	Yeast, egg yolk, liver, wheat-germ, nuts, red meat, cereals	Carbohydrate metabolism Irritability, loss of appetite
B2 (riboflavin)	Dairy product, liver, vegetables, eggs, cereals, fruit, yeast	Intercellular metabolism Chapped lips
B12	Liver, red meat, dairy products, fish	Manufacture of genetic material in cells
C	Green vegetables, fruit	Maintenance of bones, teeth and gums, ligaments and blood

		vessels. Immune response
D	Fish liver oils, Dairy	Role in absorption of calcium, aiding healthy bones
E	Vegetable oils, wheat-germ, wholemeal bread /cereals, egg yoke, nuts, sunflower seeds	Damage protection, promotion of normal growth and development, aids normal red blood cell formation Deficient can lead to muscular dystrophy
K	Green vegetables	Used by the liver

Vitamins do not provide the body with energy but they help to regulate metabolic reactions and energy release. They again can't be made in the body and must be consumed for reasons outlined in the table above. However I must be carefully no to over-consume minerals, particularly fat soluble ones as they can be harmful to health. Below is a table of the recommend daily amounts by the National Health Service for both men and women:

Vitamin	Men	Women
A	0.7mg	0.6mg
B1	1.0mg	0/8mg
B2	1.3mg	1.1mg
B6	1.4g	1.2mg
B12	0.002mg	0.002mg
C	40mg	40mg
D	0.01mg	0.01mg
E	10mg	8mg
K	0.8mg	0.06mg

Exercise increases the production of free radicals, which increases the potential for cellular damage to substances involved in biological processes. This is however not of great concern as research indicates that the body's natural defences are adequate to cope with the increased amounts of free radicals that come about as a result of exercise. Vitamin E may be a supplement which aids the body in combating free radicals, and therefore I will consume recommended amounts of this during my development plan.

Vitamins and minerals can complement each other and enhance each other's absorption and function, therefore my diet during my development plan should include a good balance of both vitamins and minerals.

Fibre:

Though fibre does not provide the body with energy or any nutrients, it is vital to every diet. It aids the digestive system to process food and absorb nutrient, It also lowers blood cholesterol and helps control blood sugar levels. It is recommended that approximately 18g of fibre is consumed per day. A few sources of fibre, some sources of both soluble and insoluble fibre are shown in the table below:

Insoluble	Soluble
Beans	Apples
Oats	Pears
Wholegrain bread / cereal	Strawberries

Water and hydration:

Water is essential for any diet, drinking the right amount and fluid is extremely important and can have a huge effect upon performance. It is the single most important nutrient to an athlete, the following table found in the Edexcel A2 PE textbook, shows the effects of water loss:

Body weight loss as sweat (%)	Physiological effect	Performance effect
1		Loss of 5%
2	Impaired performance	Loss of 10%
4	Capacity for muscular work declines	Loss of 25%
5	Heat exhaustion	Potential failure to complete
7	Hallucinations	Potentially fatal
10	Circulatory collapse and heat stroke	Potentially fatal

Though loss of water through sweat contributes to these negative effects, the loss of electrolytes also plays a large role in the negative effects upon a performer of dehydration. An athlete should always try and avoid becoming 'dehydrated' and a clear early sign of dehydration is thirst, the rate at which is absorb fluids is lower than the rate you lose them, therefore once you are dehydrated during an event, training session etc, you won't be dull hydrated again until you stop exercising.

The amount of fluid lost during exercise and therefore the amount that needs to be replaced can be calculated using body weight. Weighing and recording weight before and after the physical activity will allow the weight difference to be calculated. The weighing process should be done with no clothes on as they hold sweat. The difference in kg can then be translated into litres as a 1 kg loss is weight is approximately equivalent to 1 litre of fluid e.g. if I lost 1.2kg I would need to drink 1.2 litres of fluid .

Water is not the best substance to rehydrate with, it cause bloating and suppresses thirst, as well as stimulating urine output. It also contains no carbohydrate or electrolytes which are also lost during exercise in the form of sweat.

Drinks containing electrolytes will reduce urine output and enable fluid to empty quickly from the stomach, promote absorption from the intestine and encourage retention. Therefore it speeds up the rate at which fluid gets into the body. The replacement of electrolytes and glucose is vital to a sports performer and sports drinks can provide this. The consumption of carbohydrate in fluid before, during and after exercise will have to prevent blood glucose levels falling and aid the maintenance of the body's glycogen stores. Glycogen stores are depleted during high intensity anaerobic exercise, therefore it may be a good idea for me to consume a hypertonic sports drink after some training sessions to replace my stores and allow for a quicker more effective recovery.

There are three types of sport drink, are categorised by the levels of fluid, electrolytes and carbohydrates or their 'osmality' of their components. They are summarised in the following table:

Type	Content	Glucose content (volume)
Isotonic	Fluid, electrolytes and 6-8% carbohydrate	Similar to blood of the body
Hypotonic	Fluids, electrolytes and a low level of carbohydrate	Less than blood or the body
Hypertonic	High level of carbohydrate	Greater than blood / body

I need to keep constantly hydrated during my exercise programme, and will do so mainly through a combination of water and sports drinks, in addition to this milk (providing calcium and protein) and fruit juice (vitamins) will be consumed. Getting fluid intake levels correct may contribute greatly to the success of my training programme as the body's hydration levels impact upon performance levels and in order for my programme to be successful I need to be able to perform at an optimum level each training session.

How does what I consume provide me with energy and the substances required to train and recover?

ATP is the only usable form of energy in the body, and therefore it is required to convert carbohydrate, fat and protein (energy sources) into adenosine triphosphate to fuel muscular contraction.

There are three mechanisms that the body used to convert stored energy to ATP:

- The aerobic energy system-aerobic
- The ATP-PC system (the alactic energy system) -anaerobic
- The lactic acid system - anaerobic

The storage and release of energy:

Glycogen is made up of chain of glucose molecules and during glycolysis glycogen molecules are broken down in both aerobic and anaerobic activity. The glucose molecules are removed and released into the bloodstream or muscle cells where they are further broken down to release energy. Glucose from fats and carbohydrate in the bloodstream can be sent directly to the muscles for the release of energy, converted into glycogen for storage in the muscles or liver, converted into lipids and stored as fats. If the body does not need the glucose at that current time, it enters the fat metabolic system where it is converted into fatty acids and glycerol and store in the body as triglycerides in adipose tissue and skeletal muscle. When energy is next require from fat reserves the triglycerides are broken down into glycerol and fatty acids then transported to the lived where they are converted into glucose.

The majority of the body's glycogen is stored in the liver, and the remaining is stored in the muscles. Therefore a function of the liver is to convert glycogen into glucose when it is required for energy production. Both adrenaline and glycogen are involved in this process: Adrenaline is secreted by the adrenal glands and promotes the conversion of fats into glucose for use as an immediate energy source. glycogen promotes the conversion of fats and glycogen into glucose, which is then utilised by the body when blood sugar levels are low.

Carbohydrate is the most effective source of high intensity as it requires less oxygen to be brunt then protein or fat, though fat provides a high yield of ATP once oxidised. The table below shows the usage of fats, carbohydrates and proteins and how they are dependant on the intensity and duration of exercise:

Energy source:	Main functions:	Used as energy fuel when:
Carbohydrates	<ul style="list-style-type: none">- High intensity energy	Intensity of exercise is at a level that can't be sustained through metabolism of fats in the aerobic energy system
Fats	<ul style="list-style-type: none">- Low-intensity fuel- Insulation	Intensity of exercise is at a medium to low level and energy requirements can be met through metabolisation of fats in the aerobic energy system
Proteins	<ul style="list-style-type: none">- Muscle tissue growth	The athlete has eaten a very

	<ul style="list-style-type: none"> - Muscle tissue repair - Energy 	low-carbohydrate diet or is experiencing a famine, or towards the end of an ultra distance event
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The normal stores of carbohydrate in a typical 60kg female athlete are; liver glycogen 70g, and muscle glycogen 300g. During hard exercise, carbohydrate can be depleted at a rate of 3-4g per minute and 24-48 hours are required for the body to fully recover the muscle and liver glycogen stores. This may be significant to me during my development plan as the majority of my training consists of high intensity anaerobic exercise, and therefore these lost carbohydrates will need to be replaced. Fats are found in the body in the forms of triglycerides, phospholipids and cholesterol

Testing:

I will complete the 'flying 30m sprint' test (speed), the vertical / sergeant jump test (power), 10m sprint (acceleration). I will also record body fat percentage and weight. I will complete these tests three times to find an average score to make them more reliable and valid. I will complete them before and after completing my programme, and at a period of 4 weeks to test my improvement and effectiveness of the programme:

1. I will test at the **beginning** of my development plan, to test my initial speed, acceleration and power
2. I will test at the **intermediate** interval (4 weeks) to determine the effectiveness of my progressive overload, development plan and gauge how I need to alter my future meso-cycles in order to achieve the maximum results from my programme
3. I will test **finally** at the end to see my overall effectiveness of my development plan and the improvement I have made. These results can then be directly compared with my other sets of test results to see how I progressed over the programme and I can evaluate the success of my development plan

Flying 30m sprint: Mark out a 50m straight run on a non slippery surface and place a 'timing start' – start of the flying 30m) line. From a stationary position sprint to the whole 40m at maximum pace. The time recorded will be the time it takes from the 10m line to the end of the 40m. Reaction time is not taken into account (and to an extent neither is acceleration) and therefore it is a fairer test of 'speed' than a tests which is a reaction to a stimulus from a stationary position. Below are the national norms for 16 to 19 year olds.

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	<4.0	4.2 - 4.0	4.4 – 4.3	4.6 – 4.5	>4.6
Female	<4.5	4.6 - 4.5	4.8 – 4.7	5.0 – 4.9	>5.0

Vertical (sergeant) Jump: requires the individual to stand side on to wall or vertical object with a measuring device, with both feet on the ground their maximum stretch (the tips of fingers) should be measured. Once this has been measured the athlete should jump as high as possible and the height which they reached should then be recorded. Below are the normalities for 16-19 year olds:

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	>65 cm	50 - 65 cm	40 – 49 cm	30 – 49 cm	<30 cm
Female	>58 cm	47 – 58 cm	36 – 46 cm	26 – 35 cm	<26 cm

10m sprint: A 10m straight run should be marked out on a non slippery surface, start in a stationary position and sprint at maximum pace to the 10m line. The timing should commence at the start of the 10m and end at the 10m line. Human error will need to be taken into account with regards to the accuracy of timing.

Body Fat Percentage: This test measures the percentage of body weight which is fat tissue, though the skin callipers and method can often produce results which are not entirely accurate it provides a good rough idea of the levels of body fat. Though this is not an area which I am to improve or that my development plan should bring about changes to, testing my body fat levels at the start and the end of my programme will provide me with information about the success of my diet and the gain of muscle mass as a result of weight / resistance training. The average body fat percentage for females is between 18% and 22% and the typical value for elite female athletes is between 12% and 20%.

Weight: I will weigh myself at the beginning and then end of my development plan in order to see how my training has affected my body weight, this combined with the use of body fat % will indicate whether or not I have gained lean muscle mass.

Accuracy and Validity of results:

During the completion of my testing I will attempt to ensure that my results are as accurate as possible and are therefore valid and show accuracy regarding the effects of my development plan on my levels of speed, acceleration and power.

With regard to my test results from the 'flying 30m' and '10m sprint' I accept that human error is likely to play a role in the accuracy of my results. Therefore in order to account for human error related to timing issues a value of +/- 0.5 seconds needs to be accepted as a standard deviation from the recorded results.

PERFORMING & RECORDING

Periodisation:

Periodisation is an organised approach to training that involves progressive cycling of various aspects of a training programme over a specific period. By splitting training into periods in order to focus better on specific objectives

The macrocycle is the entire period of time, during which I will set clear and specific objectives, e.g. improve my speed / acceleration

The macrocycle is split into block called mesocycles; each mesocycles will have objectives, which when achieved contribute to the overall objectives of the macrocycle

Mesocycles are split into smaller cycles called microcycles. Individual or linked training sessions, these sessions will contribute towards the objectives of the current mesocycles

For an athlete a macrocycle may be a period of 4 years, for example a current Olympic athlete is likely to have been planning their training preparation for 2012 since the Beijing Olympics. However as my development plan will take place over approximately 9 weeks my cycles will be as follows:

Macrocycle: 9 weeks

Mesocycles: 4 weeks, 1 week, 4 weeks,

Microcycles: 2 weeks

Macrocycle: 9 weeks 18 th (January – 22 nd March)								
Mesocycle 1: 4 weeks (18 th January-14 th February)				*	Mesocycle 2: 4 weeks (22 nd February – 21 st March)			
Microcycle 1: 2 weeks (18 th -31 st January)		Microcycle 2: 2 weeks (1 st -14 th February)		*	Microcycle 3: 2 weeks (22 nd February- 7 th March)		Microcycle 4: 2 weeks (8 th -21 st March)	
18 th -24 th January	24 th -31 st January	1 st -7 th February	8 th -14 th February	*	22 nd -28 th February	1 st -7 th March	8 th -14 th March	15 th -21 st March

* Transition period between mesocycles 1 and 2 (15-21st February)

Microcycle 1:

18th - 24th January: school week 2

24th -31st January: school week 1

Microcycle 2:

1st -7th February: school week 2

8th -14th February: school week 1

Microcycle 3:

22nd – 28th February: school week 2

1st – 7th March: school week 1

Microcycle 4:

8th – 14th March: school week 2

15th – 21st March: school week 1

Final testing:

22nd -28th March: school week 2

Timetable -- Mesocycle 1, Microcycle 1

WEEK ONE	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	LESSONS	LESSONS	LESSONS	METTING MR ETTINGER 9.00	LESSONS		
2	LESSONS	LESSONS	LESSONS	LESSONS	FREE POSSIBLE TRAINING TIME -- (WEIGHTS OR SPRINT TRAINING)		
BREAK							
3	LESSONS	FREE DEVELOPMENT PLAN --SAQ, SPORTS HALL	FREE	LESSONS	FREE POSSIBLE TRAINING TIME -- (WEIGHTS OR SPRINT TRAINING)	POLY LEAGUE SENIOR NETBALL MATCH (some weeks)	SOUTH REGIONAL U19 NETBALL MATCH (most weeks)
LUNCH							
4	FREE POSSIBLE TRAINING TIME -- (WEIGHTS OR SPRINT TRAINING)	LESSONS	NETBALL	LESSONS	LESSONS P.E PRACTICAL DEVELOPMENT PLAN -- SPRINT TRAINING, ASTRO		
5	NETBALL	LESSONS	NETBALL	FREE POSSIBLE TRAINING TIME -- (WEIGHTS OR SPRINT TRAINING)	FREE POSSIBLE TRAINING TIME -- (WEIGHTS OR SPRINT TRAINING)		
BREAK							
6	NETBALL	FREE DEVELOPMENT PLAN -- WEIGHTS, GYM	NETBALL	FREE DEVELOPMENT PLAN --SAQ SPORTS HALL	SPORTS ACADEMY		
AFTER SCHOOL	PHYSIO EXERCISES	POSSIBLE TRAINING TIME --SAQ PHYSIO EXERCISES	NETBALL 7-10	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES

Monday Timetable – Mesocycle 1, Microcycle 1		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
WEEK TWO							
1	LESSONS	LESSONS	LESSONS	LESSONS	LESSONS		
2	FREE DEVELOPMENT PLAN – SPRINT TRAINING, ASTRO	LESSONS	FREE	LESSONS	FREE POSSIBLE TRAINING TIME – (WEIGHTS OR SPRINT TRAINING)		
BREAK							
3		FREE POSSIBLE TRAINING TIME – (WEIGHTS OR SPRINT TRAINING)	LESSONS	LESSONS	LESSONS		
LUNCH							
4	LESSONS	LESSONS	NETBALL	FREE POSSIBLE TRAINING TIME – (WEIGHTS OR SPRINT TRAINING)	FREE DEVELOPMENT PLAN – WEIGHTS, GYM		
5	NETBALL	LESSONS	NETBALL	LESSONS P.E. PRACTICAL DEVELOPMENT PLAN – SAQ SPORTS HALL	LESSONS		
BREAK							
6	NETBALL	FREE DEVELOPMENT PLAN – WEIGHTS, GYM	NETBALL	LESSONS	SPORTS ACADEMY		
AFTER SCHOOL	PHYSIO EXERCISES	POSSIBLE TRAINING TIME – SAQ PHYSIO EXERCISES	NETBALL 7-10	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES
						POLY LEAGUE SENIOR NETBALL MATCH (some weeks)	SOUTH REGIONAL U19 NETBALL MATCH (most weeks)

Timetable Mesocycle 1, Microcycle 2, Mesocycle 2, Microcycle 3 & 4

WEEK ONE	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	LESSONS	LESSONS	LESSONS	METTING MR ETTINGER 9.00	LESSONS		
2	LESSONS	LESSONS	LESSONS	LESSONS	FREE POSSIBLE TRAINING TIME - WEIGHTS		
BREAK							
3	LESSONS	FREE DEVELOPMENT PLAN - SAQ, SPORTS HALL	FREE	LESSONS	FREE POSSIBLE TRAINING TIME - WEIGHTS		
LUNCH							
4	FREE POSSIBLE TRAINING TIME - WEIGHTS	LESSONS	NETBALL	LESSONS	LESSONS P.E PRACTICAL DEVELOPMENT PLAN - WEIGHTS, GYM		
5	NETBALL	LESSONS	NETBALL	FREE POSSIBLE TRAINING TIME - WEIGHTS	FREE POSSIBLE TRAINING TIME - WEIGHTS		
BREAK							
6	NETBALL	FREE DEVELOPMENT PLAN - WEIGHTS, GYM	NETBALL	FREE DEVELOPMENT PLAN - SAQ SPORTS HALL	SPORTS ACADEMY		
AFTER SCHOOL	PHYSIO EXERCISES	POSSIBLE TRAINING TIME - SAQ PHYSIO EXERCISES	NETBALL 7-10	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES

POLY LEAGUE
SENIOR
NETBALL
MATCH
(some weeks)

SOUTH
REGIONAL U19
NETBALL
MATCH
(most weeks)

	Monday Timetable Mesocycle 1, Microcycle 2, Mesocycle 2, Microcycle 3 & 4	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
WEEK TWO							
1	LESSONS	LESSONS	LESSONS	LESSONS	LESSONS		
2	FREE DEVELOPMENT PLAN - SAQ SPORTS HALL	LESSONS	FREE	LESSONS	FREE POSSIBLE TRAINING TIME - WEIGHTS		
BREAK							
3		FREE POSSIBLE TRAINING TIME - WEIGHTS	LESSONS	LESSONS	LESSONS		
LUNCH							
4	LESSONS	LESSONS	NETBALL	FREE POSSIBLE TRAINING TIME - WEIGHTS	FREE DEVELOPMENT PLAN - WEIGHTS, GYM		
5	NETBALL	LESSONS	NETBALL	LESSONS P.E PRACTICAL DEVELOPMENT PLAN - SAQ SPORTS HALL	LESSONS		
BREAK							
6	NETBALL	FREE DEVELOPMENT PLAN - WEIGHTS, GYM	NETBALL	LESSONS	SPORTS ACADEMY		
AFTER SCHOOL	PHYSIO EXERCISES	POSSIBLE TRAINING TIME - SAQ PHYSIO EXERCISES	NETBALL 7-10	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES	PHYSIO EXERCISES

POLY LEAGUE
SENIOR
NETBALL
MATCH
(some weeks)

SOUTH
REGIONAL U19
NETBALL
MATCH
(most weeks)

Training exercises and Protocols of completing exercises:

SAQ Training:

I will work on a 1:5 work to rest ratio so for every one minute of work I do I will rest for five minutes in order to allow me to recover fully before completing the next set of exercises as for my SAQ training to be successful it requires me to apply the correct technique and complete the exercises at a high intensity.

Drills:

Ladder speed run:

- Two feet in each ladder as quickly as possible
- Concentrating on high knees and quick ground contact
- Enhance timing and stride frequency and quick turnover speed

Single leg run through:

- 8-10 hurdles (approximately 90cm apart) one leg outside hurdles the other going over the hurdles
- Emphasise straight outside leg and quick motion on hurdling leg
- Enhance stride frequency, Strengthening hip flexors, improving lower body coordination

Run through:

- 8-10 hurdles (approximately 90cm apart) run over hurdles, two foot stride between each hurdle with lead leg reaming the same, then at a faster pace with a one foot stride between hurdles
- Emphasise quick knee up, toe up, quick heel to bum recovery
- Enhance stride frequency, Strengthening hip flexors, improving lower body coordination

Hurdle fast legs:

- Stagger 6-10 hurdles (90cm apart), half lining up with left leg, the other half lining up with right leg
- Hurdle pattern: hurdle left leg, hurdle right leg
- Leg sequence: left leg over left hurdle, two steps in-between hurdles, right leg over right hurdle, two steps continued
- Enhance stride frequency, Strengthening hip flexors, improving lower body coordination

Skip for height:

- Skip driving free knee upward, with aggressive arm action

- Purpose to increase hip extension and flexions strength, and ankle muscle stiffness as well as leg power and enhancing stride length

Ladder stride run:

- Agility ladder, one foot down between every other run, at speed
- Enhance timing and stride frequency, quick turnover
- Emphasis upright posture, correct arm and leg mechanics

Side right in:

- Stand to the side of the ladder
- Right foot step into first square, place left foot over square to other side of the ladder
- Right foot into second square, step back with left foot in-front of second square
- Right foot to third square and continue
- Enhances agility, balance, co-ordination, quickness development

Side left in:

- Stand to the side of the ladder
- Left foot step into first square, place right foot over square to other side of the ladder
- Left foot into second square, step back with right foot to in-front of the second square
- Left foot into the third square and continue
- Enhances agility, balance, co-ordination, quickness development

Icky Shuffle:

- Start on left side of ladder
- Right foot into first square, then left foot
- Right foot to right side of the ladder, left foot to the next square in the ladder
- Right foot back to square left foot is currently in, left foot to left side of ladder
- Look up during the drill, avoid looking at feet
- To advance perform backward as well as forward
- Purpose to enhance co-ordination and improve lower-body quickness

Hop scotch:

- Start with both feet in first run of ladder

- Jump with both feet to landing feet either side of the ladder
- Jump and land with one foot inside the next run and repeat sequence alternating foot landing in the run
- Purpose to improve mental processing speed and total body reaction time, enhance total body agility and elastic strength in ankle

In and out shuffle:

- Start two point stance
- Step left foot into first square then follow with right foot
- Step back and diagonally with the left foot until it is in front of second square
- Follow with right foot
- Repeat with right foot leading
- Can add receiving and passing a ball into drill
- Purpose to improve mental processing speed and total body reaction time, enhance total body agility

40 meter lateral shuffle:

- Start in two point stance, facing sideways
- Shuffle 5m to first line, touch line with outside foot and shuffle back to start line, touch with outside foot
- Shuffle 10m to second line, touch with outside foot, shuffle back to start line touch with outside foot
- Shuffle 5m to first line, touch line with outside foot and shuffle back to start line
- Purpose to improve agility, conditioning and strength abductor and adductor flexibility

50m back pedal forward:

- Start two point stance, with back to starting line
- Back pedal 5m to first line, touch with either foot, sprint forward to starting line
- Back pedal 10m to second line, touch with either foot, sprint forward to starting line
- Back pedal 5m to first line, touch with either foot, sprint forward to finish line
- Purpose to improve agility, change of direction and conditioning development

Barrier jump sprint:

- Jump over barrier using extension of hip, knee and ankle
- Land and sprint
- To advance partner gives signal when in air to sprint left or right upon landing
- Purpose to improve lower body power and quickness

Medicine ball wall chest pass:

- Using wall perform chest passes to wall, receiving ball with arms extended
- Advance to shoulder pass
- Improve total transmission of power in the body

Medicine ball over-head throw:

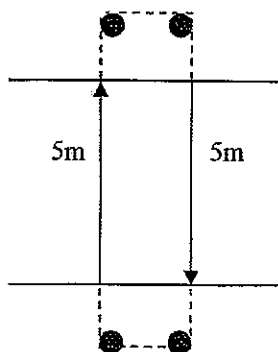
- Lower ball over and behind head then release and receiver ball
- To increase difficulty, stand on one leg and complete exercise
- Purpose to improve explosive power in throwing or overhead activities

Medicine ball side toss throw:

- Face the wall with medicine ball at side
- Throw ball striking wall in front
- Purpose to enhance explosive rotational mechanics and changes in direction

Speed / Interval training:

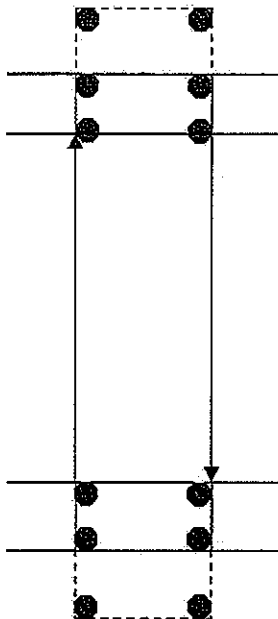
- Sprint 10metres, walk 5m back to start (recovery), repeat 3 sets of 8 reps



Key:

- ↑ = 100% sprint
- = Walk
- = Start / Finish line
- = Cone

- Sprint 20m, Jog 5m, Walk 5m (recover), repeat three sets of 6 reps
- Sprint 30m, Jog 5m, Walk 10m (recover), repeat three sets of 6 reps



Key:

- ↑ = 100% sprint
- = Walk
- = Start / Finish line
- = Jog
- = Cone

Weight / resistance training:

I will complete the exercises outlined below; I will exhale at the start of major exertions and inhale at the eccentric phase, with a fast concentric contraction improving power and a slow eccentric contraction providing good overall strength gains. When I am completing the lifts I will ensure my spine is in neutral, I have tight abdominals and gluteus muscles and I achieve a full range of movement.

For all lifts I will complete at 80-85% of my one rep max. With 3 sets of 5 reps in order to improve my overall body strength and power and as a result improve my power and acceleration. This is the correct sets, reps and percentage of one rep max to specifically target and improve power. I will have rest periods of around one minute between exercises. During my training I should experience strength gains and therefore my one rep max should increase. I will need to use the training principle of progression by increasing the weight of my lifts of each mesocycle, if my results suggest that there has been an improvement in muscular strength.

Protocols of all lifts will include:

- Inhale during eccentric contraction
- Exhale during concentric contraction (major exertion)

- Core should be contracted: spine in neutral, right abdominals and gluteus muscles
- Complete the full range of movement with each exercise
- Ensure others are always around to help, though I am mainly using machine weights so safety shouldn't be a problem, to be safe I should always complete sessions with others

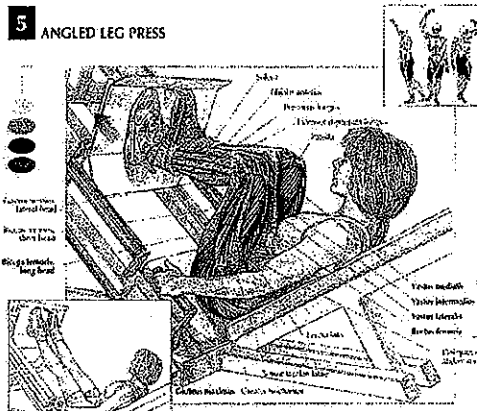
The order in which I complete my exercises will be multi-joint compound exercises (core) such as the bench press, seated row, and Lats pull down before single joint exercises e.g. bicep curls, where single muscle groups are isolated and worked.

If successful my weight / resistance training programme will result in the long term adaptation of muscular hypertrophy.

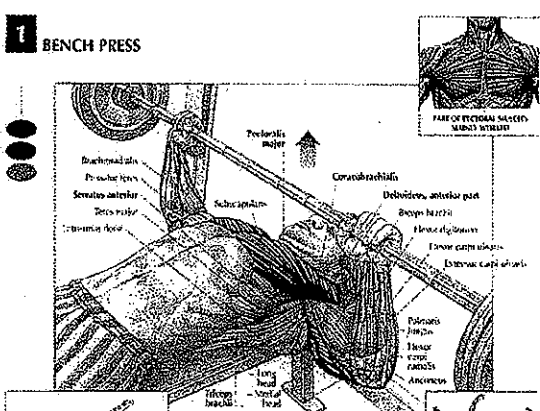
Below are diagrams that show the main muscle groups worked in each lift:

STRENGTH TRAINING ANATOMY

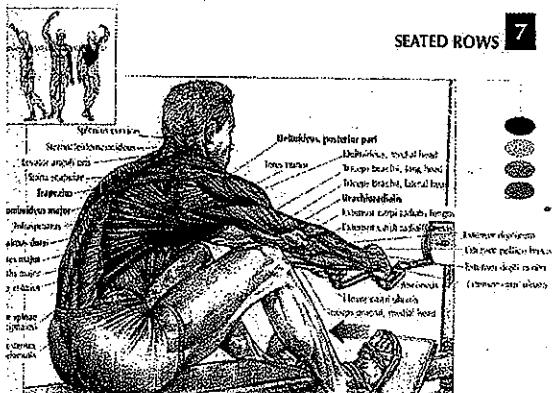
5 ANGLED LEG PRESS



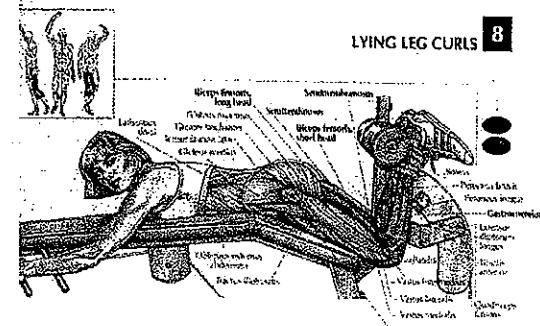
1 BENCH PRESS



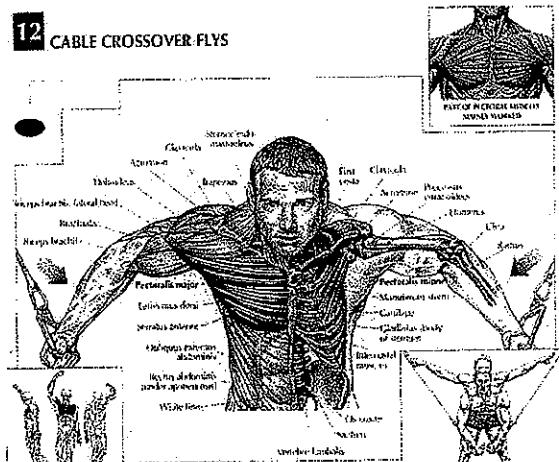
7 SEATED ROWS



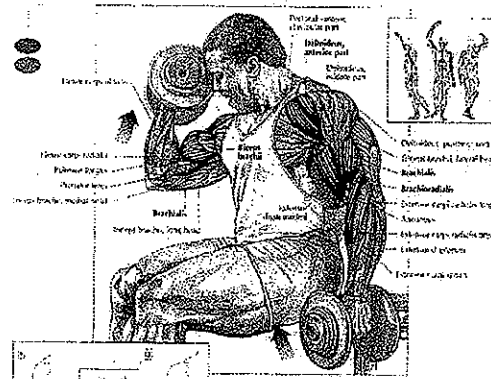
8 LYING LEG CURLS



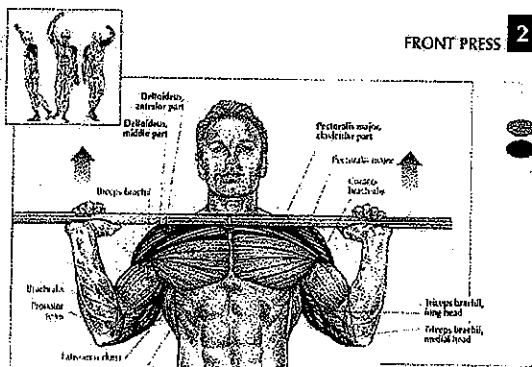
12 CABLE CROSSOVER FLYS



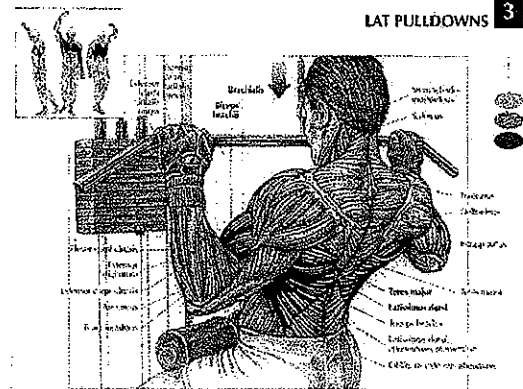
1 CURLS



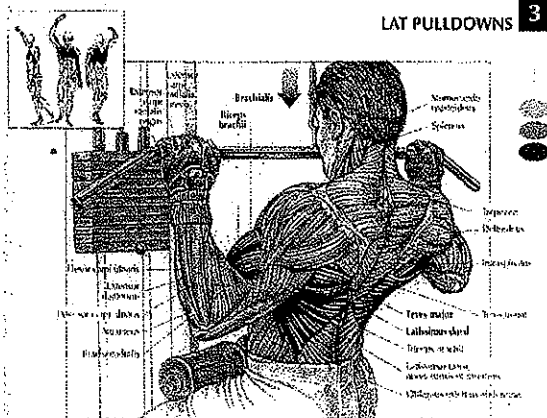
FRONT PRESS 2



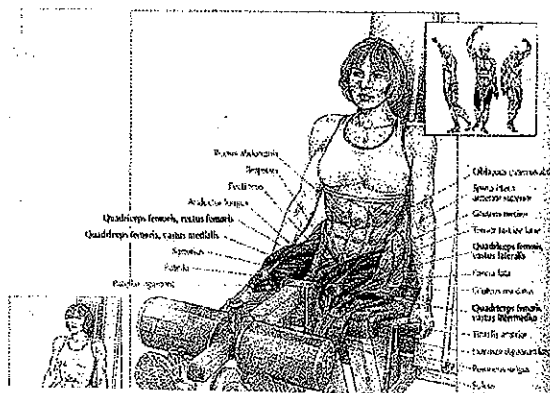
LAT PULLDOWNS 3

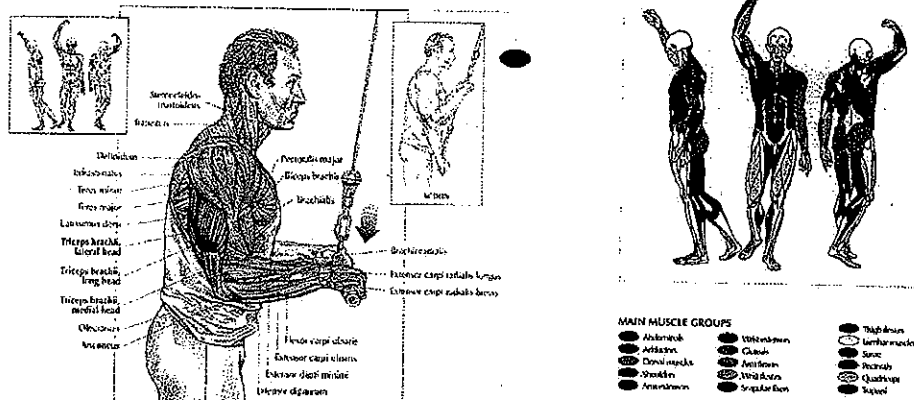


LAT PULLDOWNS 3



7 LEG EXTENSIONS





Exercises - Foundation programme:

Lift	Mesocycle 1: 80-85% of 1 rep max:	Mesocycle 2: 80-85% of 1 rep max:
Leg Press:	8 plates	11 plates
Bench Press:	4 plates	4 plates
Seated Row:	11 plates	13 plates
Hamstring Curl:	1.5 plates	1.5 plates
Cable Cross Flys:	2.5 plates	2.5 plates
Bicep Curl:	Left: 8 kg Right: 10kg	Left: 10 Right: 10
Shoulder Press:	Left: 8 kg Right: 10kg	Left: 10 Right: 10
Lats Pull Down:	4 plates	5 plates
Leg Extension:	4 plates	4 plates
Tricep Pull down with rope:	4 plates	5 plates

**TRAINING SESSION
& DIET RECORDS:
MESOCYCLE 1,
MICROCYCLE 1**

Date: 18 th - 24 th January	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	- 2 X Weet-bix and Milk - 1 x banana - 1 x apple 1 portion of potatoes - 1 portion of lamb stew - 1 portion of chicken - 2 flour wraps - Lettuce - 30g of Low fat cheese - 250ml of flavoured milk - strawberry liquorice - 1 Low fat strawberry yoghurt - 1L of Cordial - Water	- 2 X Weet-bix and Milk - 1 x banana - 1 portion of Pasta - 1 portion of chicken - 1 portion of quiche - Salad and cheese - Small portion of low fat yoghurt, honey and muesli - Special fried rice containing: 1 portion of rice, eggs, vegetables and prawns - 1 Low fat strawberry yoghurt - 1L of Cordial - Water	- 2 X Weet-bix and Milk - 1 x banana - 1 portion of quiche - Salad and cheese - 2 Low fat toffee yoghurt - Coleslaw - Sweet corn - 1 portion of chicken pie, mushrooms, onions and creamy source - 1 portion of broccoli - 1 portion of carrots - 4 Jaffa cakes - 1 Low fat strawberry yoghurt - 1L of Cordial - Water	- 2 plain crackers with butter - Small portion of pasta with grated cheese - Sweet corn - 1L of Cordial - Water	- 2 X Weet-bix and Milk - 1 x banana - 1 portion of chicken - Salad and cheese - Coleslaw - Sweet corn - Small portion of low fat yoghurt, honey and muesli - Jacket Potato with butter - Salad - 1 Low fat strawberry yoghurt - 1L of Cordial - Water	- 1 and a half Hot cross buns with butter - 1 portion cheese and onion quiche - Lettuce - 1 portion of ham - 1 Low fat strawberry yoghurt - 1 portion of rice - 1 portion of chicken, cooked peppers and mushrooms - Satay Sauce - 1L of Cordial - Water	- 1 Low fat strawberry yoghurt - 1 homemade fruit smoothie: containing raspberries, black berries, mango sorbet, milk, apple juice, ½ banana and honey - 1 x banana - 2 X Weet-bix and Milk - 1 portion of pasta - 1 portion of grated cheese - 1 portion of chicken - 1 portion of tomato based sauce - 1L of Cordial - Water
Protein:	56g	70g	60g	20g	50g	65g	79g
Carbohydrate:	460g	420g	430g	110g	300g	350g	320g

Date: 24.01.10- 31.01.10	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 portion of quiche - Salad and cheese - Coleslaw - Small pot of yoghurt, muesli and honey - Small pot of yoghurt, muesli and honey - Small portion of cheesy, tomato pasta - 1 portion of pasta - 1 portion of grated cheese - 1 portion of tomato based sauce - 1 Low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - Fruit Smoothie containing berries, mango sorbet, milk, apple juice, half a banana and honey - Lettuce - 1 portion of rice - 1 portion of ham - Small pot of yoghurt, muesli and honey - Jacket potato with butter - Chicken Mayo - Lettuce - Orange - Piece of chocolate - 1L of Cordial 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - Hot Chocolate - 1 portion of quiche - Salad and cheese - Coleslaw - 2 small somosas - 1 Low fat peach yoghurt - 1 portion of risotto - 1 Low fat strawberry yoghurt - Orange - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 portion of pasta and cheese - Coleslaw - Sweet corn - Small portion of low fat yoghurt, honey and muesli - Sausages x 3 - 4 small boiled potatoes - broccoli - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - Banana - 2 sausages - Portion of baked beans - 1 hash brown - cooked tomato - Small portion of low fat yoghurt, honey and muesli - Bread roll - Dips, butter and Philadelphia - Cucumber - Carrots - Mini Quiche - 1 portion of salami - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 croissants with jam and butter - 2 mini chocolate brownies - 1 portion of rice - 1 portion of grilled chicken - Curry sauce - 1 portion of salad - 1L of Cordial - Water 	<ul style="list-style-type: none"> - Fruit smoothie: containing fruit, yoghurt, sorbet, milk, apple juice and honey - Hot chicken wrap: 1 portion of chicken, one wrap, peppers, lettuce - Stir fry: containing one portion of chicken, large amounts of vegetables, plum, sauce and 1 portion of egg noodles - 1L of Cordial - Water
Protein:	50g	60g	60g	40g	50g	28g	40g
Carbohydrate:	300g	430g	300g	240g	350g	330g	435g

Name:

Date: 19.01.10

Time: 2.45-2.45

Training session / type: Weights

Venue: Gym, School

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A - inside

Warm Up: Completed successfully

Cool Down: Completed, however pushed for time

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No injuries or pain

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Did not need to adapt session
everything ran smoothly

Evaluation:

Good 1st session in general. I was a little unfocused and distracted due to exams however I did completes all set exercises in time and timed my rest periods.

Name: 5

Date: 19.01.10

Time: 5.00-6.00

Training session / type: SAQ

Venue: Sports Hall, School

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A, inside

Warm Up: Completed successfully

Cool Down: Completed and extended due to tight lower leg muscles

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Sore knees, particularly left knee, quadriceps felt tight

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Reduced number of reps when in pain in knee of exercises involving the left knee

Evaluation:

Good overall session. Enjoyable. Focused on technique and the importance of getting the right placement and technique before increasing the speed of the exercises.

Name: :

Date: 21.01.10

Time: 3.45-4.55

Training session / type: SAQ

Venue: Sports Hall

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A inside

Warm Up: Completed successfully

Cool Down: Completed successfully

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No injuries or difficulties

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

I did not have to adapt this session

Evaluation:

Good overall session, still thinking about the importance of focusing on technique and not speed until my technique is correctly refine and automatically comes to me when completing the exercises

Name: !

Date: 22.01.10

Time: 2.45-3.45

Training session / type: Weights

Venue: Gym, School

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Knee hurt during leg extension

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Only completed one set of leg extensions due to pain.

Was very ill the day before, therefore had very little energy.

Evaluation:

Good session, considering the circumstances of being very sick the day before, dehydration etc.

Name: :

Date: 25.01.10

Time: 5.00-6.00

Training session / type: Sprint

Venue: Sportshall

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A inside

Warm Up: Completed and extra stretching

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Tight calves, apart from that all ok

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Extra stretching required to help loosen calves

Evaluation:

Good session, well times rest periods etc, felt good. Little frustrated due to exams but helped me be motivated and as the session went on became very productive

Name:	Date: 26.01.10	Time: 4-5
Training session / type: Weights		Venue: Sportshall
Mesocycle: 1	Microcycle: 1	Weather conditions: Inside N/A
Warm Up: Completed		Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Had Physio session earlier that day, therefore very sore lower body

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

2 sets of leg extension as apposed to the planned 3

<p>Evaluation:</p> <p>Great session, better focused and able to completely concentrate now exams have concluded</p>
--

Name:

Date: 28.01.10

Time: 2.45-3.45

Training session / type: SAQ

Venue: Sports hall

Mesocycle: 1

Microcycle: 1

Weather conditions: N/A Inside

Warm Up: Completed and extended stretching

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Sore knees

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Took it a bit steady when knees were hurting

Evaluation:

Good session, completed everything in good time. Enjoyed the session and felt improvement compared to last SAQ session.

Name: Nai		Date: 29.01.10	Time: 1.45-2.45
Training session / type: Weights		Venue: Gym, School	
Mesocycle: 1	Microcycle: 1	Weather conditions: N/A inside	
Warm Up: Completed		Cool Down: Completed	

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries: No Difficulties or injuries specifically

Adaptations: No need to adapt for the session, everything went to plan
--

Evaluation: Lacked a little motivation in session, but was a good general session, completed all sets and reps

TRAINING SESSION & DIET RECORDS: MESOCYCLE 1, MICROCYCLE 2

01.02.10-07.02.10	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 x apple - 1 portion of potatoes - 2 pork sausages - Portion of sweet corn and peas - Small portion of low fat yoghurt, honey and muesli - 1 Low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - Cheese sandwich - Small packet of ready salted crisps - Chocolate and Honey comb milkshake - Chicken and Mushroom pasty - 1 portion of sweet-corn - Small portion of frozen plain cheesecake - 1 x banana - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 2 small roast potatoes - 1 portion of chicken pie: containing chicken breast, pastry - 1 portion of sweet corn - Small portion of low fat yoghurt, honey and muesli - Small portion of cheesy, tomato pasta - 1 portion of pasta - 1 portion of grated cheese - 1 portion of tomato based sauce - 1 Low fat strawberry yoghurt - Jelly babies - 2 pieces of toast with butter and honey - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 x apple - portion of cold pasta - Lettuce - grated carrots - 1 piece of ham - 1 Low fat strawberry yoghurt - 1 Low fat peach yoghurt - Small - 3 small sausages - 1 x large baked potato - 1 portion of sweet corn - 1 portion of Lettuce - Small portion of frozen plain cheesecake - Small portion of fruit salad - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1L of Cordial - Water - 1 x banana - 1 portion of chicken - Salad and cheese - Coleslaw - Sweet corn - Small portion of low fat yoghurt, honey and muesli - 1 portion of rice - 1 portion of salmon - 1 portion of Asparagus - 1 portion of Green beans - 2 Low fat strawberry yoghurt 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1L of Cordial - Water - 2 x banana - 2 X Weet-bix and Milk - 4 flour wraps - 1 portion of chicken - Portion of cooked onions and peppers - Sour cream, guacamole, salsa - Portion of ice cream 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1L of Cordial - Water - 3 x banana - 2 small paninis containing: cheddar cheese, mozzarella, Parma ham, sun dried tomatoes, lettuce - 1 apple - 1 portion of chicken stuffed with peppers, mushrooms and crème fresh - Portion of rice - Portion of ice cream
Protein:	30g	55g	60g	45g	43g	38g	47g
Carbohydrate:	275g	300g	350g	320g	280g	220g	350g

Development plan - Diet Recording sheet:

Date:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
08.02.10-14.02.10							
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 pear - 1 portion of lamb stew - 2 boiled potatoes - 1 portion of sweet corn - 1 portion of pasta - 1 portion of tomato based source - 2 pieces of pizza - Malteasers - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 1 portion of rice - 1 portion of rice - 1 low fat peach - 1 croissant - 1 portion of tuna pasta bake - 1 portion of sweet corn - 1 low fat peach - 1 x banana - Special fried rice containing: 1 portion of rice, eggs, vegetables and prawns - 1 portion of ice cream - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 portion of potatoes - 3 small sausages - 1 portion of sweet corn - Coselaw - Gravy - Small portion of low fat yoghurt, honey and muesli - 1 portion of chicken - 1 portion of curry sauce - 1 portion of rice - Small bowl of muesli with milk - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 portion of special fired rice - 1 pork chop - 1 portion of noodles - Small portion of low fat yoghurt, honey and muesli - very small portion of pasta - 4 chocolate caramel squares - Apple - 1 low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 1L of Cordial - Water - 1 Weet-bix and milk - 2 fish cakes - 1 portion of baked beans - 1 portion of chips - 1 portion of sweetcorn - Small portion of low fat yoghurt, honey and muesli - Special fried rice containing: 1 portion of rice, eggs, vegetables and prawns - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 2 small paninis containing: cheddar cheese, mozzarella, Parma ham, sun dried tomatoes, lettuce - 1 portion of chicken pie, mushrooms, onions and creamy source - 1 portion of broccoli - Portion of ice cream - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 3 x banana - 1 low fat strawberry yoghurt - 1 portion of pasta - 1 portion of grated cheese - 1 portion of chicken - 1 portion of tomato based sauce - 1L of Cordial - Water
Protein:	35g	42g	45g	45g	37g	41g	36g
Carbohydrate:	320g	275g	295g	330g	315g	320g	290g

Name:

Date: 01.02.10

Time: 1.45-2.45

Training session / type: SAQ

Venue: Sports Hall

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No specific difficulties or injuries with this session

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

I did not need to adapt this session

Evaluation:

Slight lack of concentration in this session due to worry about exams, therefore mind not one hundred percent focused on the task, with SAQ this is particularly vital as training the neuromuscular firing patterns requires concentration and the placing of feet in ladders etc meant the session became difficult and slightly stressful when sequences such as hopscotch did not work first time.

Name: !

Date: 02.02.10

Time: 5.00-6.00

Training session / type: SAQ

Venue: Sports hall

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A

Warm Up: Did not complete

Cool Down: Did not complete

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Extremely tight muscles.

Overtiredness and severe lack of energy from previous day.

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Did not complete session

Evaluation:

I decided not to complete this session as this week I am playing in 4 netball matches, completing training sessions for both school and club and in addition have 4 development plan sessions to complete. I believe I am overtraining at this time as I have a real lack of energy, am suffering from very sore legs and cramp. In my match the previous day I had to call injury time early in the 4th quarter as my legs, in particular calves and knees were causing me so much pain. I have to prioritise being fit and energetic for both my school matches on Wednesday and Saturday, and my south regional game on Sunday. Not completing this session was a tactical decision as my recent performances have been poor in my view due to a lack of energy and pain. Therefore I did not complete this session as I believe it would only negatively affect my performance and development, not due to laziness or tedium.

Name: S

Date: 04.02.10

Time: 2.35-3.45

Training session / type: Weights

Venue: Gym, School

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Lower body muscles were causing me pain, muscles were tight, sore and heavy.

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Did not complete any lifts that directly placed pressure on my lower body – leg press, hamstring curl, leg extension.

Evaluation:

Good session considering the constraints and restrictions of resting my lower body. Motivated for the session and decided to complete as much as I could, e.g. upper body lifts.

Name: f

Date: 05.02.10

Time: 1.45-2.45

Training session / type: Weights

Venue: Gym, School

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed, though pushed for time

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Still tight hamstrings causing me pain and cramping

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Did not complete hamstring curl and pain was to much

Evaluation:

Good overall session, annoying hamstring curl could not be completed. I was well motivated and felt this session went well and I am improving.

Name

Date: 08.02.10

Time: 1.45-2.45

Training session / type: SAQ

Venue: Sports hall/ gym

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus /Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude /Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries: <ul style="list-style-type: none">- DOMS from south match the previous day- Tight hamstrings and calfs- Pain in left knee

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations: <ul style="list-style-type: none">- When in pain reduced the reps of the exercise

Evaluation: <p>Session where I attempted to focus on technique as apposed to speed and take into account my pain and sore knees.</p>

Nam		Date: 09.02.10	Time: 3.45-4.50
Training session / type: Weights		Venue: School Gym	
Mesocycle: 1	Microcycle: 2	Weather conditions: N/A inside	
Warm Up: Completed		Cool Down: Completed	

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries: <ul style="list-style-type: none"> - Tight hamstring - Pain in knees when completing leg extension
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Adaptations: <ul style="list-style-type: none"> - Reduced sets and lowered number of plates on leg extension
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Evaluation: Good session, though frustrated my pain in my legs. Some whole body lifts are getting easier therefore when I test on Thursday I need to consider the change in weights I need to make in order to progress and continue to overload my body
--

Name:

Date: 12.02.10

Time: 1.35-2.45

Training session / type: Weights

Venue: School Gym

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

- Continuous problems with tight hamstrings

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

- Completed hamstring curl on a lower weight, and only completed 2 sets

Evaluation:

Good overall session, felt motivated to complete it. Hamstrings causing me problems however so need to consider what I am going to do to avoid this problem in the future

Name:

Date: 12.02.10

Time: 3.45-4.45

Training session / type: SAQ

Venue: Sports Hall

Mesocycle: 1

Microcycle: 2

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:
No specific problems

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Did not need to adapt due to injury however slight lack of space meant jump could not be completed

Evaluation:

Good session, good use of time. I enjoyed this session and feel as though aspects are improving

**TRAINING SESSION
& DIET RECORDS:
MESOCYCLE 2,
MICROCYCLE 3**

Development plan - Diet Recording sheet:

Date: 07.03.10 – 07.03.10	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 banana - 1 piece of Salmon with Philadelphia - 1 portion of mashed potato - 1 portion of leeks - 1 portion of sweet corn - Cherry crumble with custard - 1 portion of Pasta - 2 hot cross buns with butter - 1 portion of tomato based sauce - 1 low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 passion fruit - Jacket potato with baked beans and cheese - Small portion of low fat yoghurt, honey and muesli - 1 kiwi - 3 sausages - leeks - 1 portion of daphnia - 1 bowl of muesli with milk - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 mango, banana and passion fruit smoothie - 2 hot cross buns with butter - 2 muesli bars - Bottle of powerade - small portion of rice - green beans, asparagus - Portion of ice cream - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 portion of lasagne - small portion of potatoes - piece of garlic bread - Portion of sweet corn - 2 X Small portions of low fat yoghurt, honey and muesli - 1 portion of pasta - 1 portion of grated cheese - 1 portion of tomato based sauce - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 banana - 1 portion of quiche - Salad and cheese - Coleslaw - 2 small somosas - Small portion of low fat yoghurt, honey and muesli - 2 hot cross buns with butter - 1 kiwi - Jacket potato with butter - Portion of Baked Beans - Portion of grated cheese - 1 apple - 1 portion of mango sorbet - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1L of Cordial - Water - 2 x banana - 1 portion of chicken ceaser salad - 4 flour wraps - 1 portion of chicken - Portion of cooked onions and peppers - Sour cream, guacamole, salsa - Portion of ice cream 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 low fat strawberry yoghurt - 1 home made beef burger, with onions, mayo and tomato sauce - 1 portion of salad - 1 portion of pasta - 1 piece of chicken breast with creamy mushroom sauce - 1 portion of new York cheese cake - 1 apple
Protein:	42g	35g	37g	38g	40g	35g	34g
Carbohydrate:	275g	280g	250g	280g	310g	295g	280g

Development plan - Diet Recording sheet:

Date: 22.02.10-28.02.10 January	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 banna - 1 portion of pasta - Portion of bolognsae sauce - Sweetcorn - Small portion of low fat yoghurt, honey and muesli - 1 portion of Pasta - 1 portion of tomatoe based sauce - 1 portion of cheese - 1 banna - 1 portion of ice cream - Apple - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 banna - 1 plain biscuit - 1 piece of beef - Gravy - 3 crocet potatoes - Sweetcorn - Small portion of low fat yoghurt, honey and muesli - Pinapple - Pannini: basil, tomatoe and brie - Cholate (small portions) - Oasis Drink (cordial) - Organe - Apple - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 apple - 1 ham sandwich - 1 packet of salt and vinegar snakajacks - 1 portion of rice - 1 portion of chilli - Small portion of sour cream - 1 twix bar - 1 hot cross bun - Strawberry milk - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - Beef and mushroom pie - 1 portion of mashed potatoe - 1 portion of sweetcorn - Small portion of low fat yoghurt, honey and muesli - 1 portion of muesli and milk - 1 hot cross bun - 1 small iced bun - 2 small biscuits - 1 jacket potatoe with chesse and baked beans 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - Beef and mushroom pie - Sweetcorn - Small portion of low fat yoghurt, honey and muesli - 2 hot cross buns - 1 portion of chicken pie - sweet corn - asparagus, green beans and leeks - portion of strawberries and ice cream - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 bacon sandwich - 1 low fat strawberry yoghurt - 1 small bar of aero cholate - Caramel hot chocolate - 1 chicken burger - 1 portion of salad - Mayo, Tomato Sauce - 1 portion of coleslaw - corn on the cob - 2 scoops of ice cream - 2 bananas - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1L of Cordial - Water - 2 x Powerade - 1 Portion of chicken and sweetcorn pasta salad - 1 x banana - 1 strawberry milkshake - 1 portion of pasta - 1 portion of grated cheese - 1 portion of tomato based sauce
Protein:	35g	32g	38g	41g	32g	42g	36g
Carbohydrate:	295g	310g	285g	295g	320g	335g	280g

Name:

Date: 22.02.10

Time: 1.35-1.45

Training session / type: Weights

Venue: Gym, School

Mesocycle: 2

Microcycle: 3

Weather conditions: N/A

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

N/A

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

N/A

Evaluation:

I really enjoyed this session, felt it was very productive. I was alone in the gym and enjoyed this as did not have to wait or plan my session around any one else.

Name:

Date: 24.02.10

Time: 11.00-12.00

Training session / type: SAQ

Venue: Sports hall

Mesocycle: 2

Microcycle: 3

Weather conditions: N/A

Warm Up: Completed

Cool Down: Completed with additional stretching

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Netball match followed by 2 hours of training that night. therefore did not want to tire myself to much

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Reduce number of reps, for each exercise

Evaluation: Though I could not complete this session to my maximum ability due to conflicting events later that day, and the presence of knee pain, I still thought it was a worthwhile session

Name:

Date: 25.02.10

Time: 2.45-3.45

Training session / type: SAQ

Venue: Sports hall

Mesocycle: 2

Microcycle: 3

Weather conditions: N/A

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No real problems, right knee was in slight pain when completing hurdle exercises

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

I didn't adapt the session in any way

Evaluation:

Good session, focus and concentration were a little hard to maintain as frustrated, however concentrated on technique and increasing stride frequency etc

Name:

Date: 26.02.10

Time:1.35-2.45

Training session / type: Weight

Venue: School Gym.

Mesocycle: 2

Microcycle: 3

Weather conditions: N/A

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No injuries which stopped me completing sets or reps, however clicky shoulders and tight hamstrings

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

I did not have to make any adaptations to today's session

Evaluation:

Goods overall session, felt in less pain then normal and therefore was able to complete all exercises, high motivation, now I have readjusted the weights to suit my new 1 rep max's I am finding the sessions more rewarding, though they are harder work

Name		Date: 02.03.10	Time: 11.00-12.10
Training session / type: Weights		Venue: School Gym	
Mesocycle: 2	Microcycle: 3	Weather conditions: N/A	
Warm Up: Completed		Cool Down: Completed	

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries: - Shoulder injury: prevented me from completing any exercises that involved my right bicep tendon
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Adaptations: - Removed bench press, cable cross flies, bicep curl and shoulder press (right side only) lats pull down and tricep pull down with rope
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Evaluation: Good session for what I could complete. Shoulder in a lot of pain and therefore very frustrating I could not complete most of the upper body exercises, injury again preventing me from completing full session, however lower body exercises were successful.
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Name: :	Date: 02.03.10	Time: 3.45-4.50
Training session / type: SAQ		Venue: School Sports Hall
Mesocycle: 2	Microcycle: 3	Weather conditions: N/A
Warm Up: Completed		Cool Down: Completed

Mental Approach	Rating: 1-10	Difficulties / Injuries: Shoulder injury, preventing full movement and as a result reducing good technique as was not able to 'pump arms' correctly etc
Motivation:	1 2 3 4 5 6 7 8 9 10	
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10	
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10	
Energy Levels:	1 2 3 4 5 6 7 8 9 10	

Physical	Rating: 1-10	Adaptations: Completed all exercises bar medicine ball throwing: avoiding movement and strain to my shoulder
Lower Body:	1 2 3 4 5 6 7 8 9 10	
Upper Body:	1 2 3 4 5 6 7 8 9 10	
Cardiac:	1 2 3 4 5 6 7 8 9 10	
Overall Feeling:	1 2 3 4 5 6 7 8 9 10	

Evaluation: Good session, shoulder frustrating me but managed to work around my injury.

Name

Date: 04.03.10

Time: 3.45-4.50

Training session / type: Weights

Venue: School Gym

Mesocycle: 2

Microcycle: 3

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

- Shoulder injury: prevented me from completing some exercises that heavily involved my right bicep tendon

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Removed cable cross flys, bicep curl and shoulder press (right side only) and tricep pull down with rope. Increased sets of other exercises e.g. leg press

Evaluation:

Good Session for what I could complete, I was highly motivated though frustrated with injury. I enjoyed this session and believe my strength in some areas is improving rapidly and hopefully as a result my power will be increasing.

Name	Date: 05.03.10	Time: 3.45-4.50
Training session / type: SAQ		Venue: Sports Hall
Mesocycle: 2	Microcycle: 3	Weather conditions: N/A inside
Warm Up: Completed		Cool Down: Completed

Mental Approach	Rating: 1-10	Difficulties / Injuries: Shoulder still in pain, restricted use of technique on some exercises.
Motivation:	1 2 3 4 5 6 7 8 9 10	
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10	
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10	
Energy Levels:	1 2 3 4 5 6 7 8 9 10	

Physical	Rating: 1-10	Adaptations: Reduced reps and sets of medicine ball throw as unable to complete without pain
Lower Body:	1 2 3 4 5 6 7 8 9 10	
Upper Body:	1 2 3 4 5 6 7 8 9 10	
Cardiac:	1 2 3 4 5 6 7 8 9 10	
Overall Feeling:	1 2 3 4 5 6 7 8 9 10	

Evaluation: Good session, focusing very much on improving technique in order to improve speed. I worked on refining my technique and even timing some runs through ladders to find out which technique resulted in greater speed. Very useful session to ensure all my exercises are being completed correctly in order to maximise my improvements towards the end of my development plan.

TRAINING SESSION & DIET RECORDS: MESOCYCLE 2, MICROCYCLE 4

Development plan - Diet Recording sheet:

Date:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
08.03.10-14.03.10							
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 portion of tomatoe based pasta with cheese - Small portion of low fat yoghurt, honey and muesli - Stir fry: containing one portion of chicken, large amounts of vegetables, plum, sauce and 1 portion of egg noodles - 1 portion of new York cheese cake - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 x banana - 1 hot chocolate - 1 portion of quiche - Salad and cheese - Coleslaw - Sweet corn - Small portion of low fat yoghurt, honey and muesli - of low fat yoghurt, honey and muesli - 1 portion of asparagus - 1 portion of pastry, mozzarella cheese, sundried tomatoe and pesto dish - 1 portion of salad 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 portion of quiche - 3 herb potatoes - gravy - portion of carrots - sweet corn - 1 low fat peach yoghurt - 1 portion of garlic chicken breast - New potatoes - 1 portion of asparagus - 1 portion of brochillini - 1 portion of frozen new York cheese cake - 1L of Cordial - Water - Powerade 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 pear - Portion of rice - 1 spring roll - 1 portion of sweet corn - 1 portion of coselaw - Small portion of low fat yoghurt, honey and muesli - Jacket Potato with butter - Portion of Baked beans and grated cheese - 1 banana - Small bar of fruit and nut chocolate 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 2 pork sausages - 1 hash brown - 1 portion of baked beans - Small portion of low fat yoghurt, honey and muesli - 1 piece of plain sponge cake - 1 portion of pad Thai curry - 1 portion of breadsticks, crisps and sour cream - Small portion of ice cream - 1 apple - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 hot cross buns with butter - 1 fruit smoothie containing: milk, sorbet, frozen berries, mango and pineapple and orange juice - 1 piece of plain sponge cake - 1 large jacket potato with butter - 1 portion of grated cheese - 1 portion of baked beans - 1 portion of frozen new York cheese cake - 1 low fat strawberry yoghurt 	<ul style="list-style-type: none"> - Small portion of fruit salad - 1 hot cross bun with butter - 1 small banana smoothie; containing milk, bananas and honey - 1 raisin swirl - 1 portion of grilled salmon - 1 portion of green beans - portion of asparagus - 1 portion of bread with dip - 1L of Cordial - Water
Protein:	42g	38g	38g	36g	40g	38g	41g
Carbohydrate:	310g	275g	295g	310g	320g	310g	290g

Development plan - Diet Recording sheet:

Date: 15.03.10-21.03.10	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Substances Consumed:	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 2 oranges - 1 portion of pasta - 1 portion of bolognese sauce - 1 small slice of garlic bread - 1 portion of peach crumble and custard - 2 sausages - 1 portion of potatoes - 1 portion of asparagus and leeks - 1 low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 orange - portion of lettuce and cucumber - half a cold sausage - 1 portion of coleslaw - 1 piece of chicken - 1 low fat peach yoghurt - 1 large jacket potatoe with butter - 1 portion of baked beans - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 apple - Portion of lettuce - 1 portion of ham and chicken - Coleslaw - Sweet corn - 1 portion of pasta, tomato based sauce and cheese - 1 low fat strawberry yoghurt - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 banana - 1 low fat strawberry yoghurt - Portion of lettuce - 1 portion of ham and chicken - Coleslaw - Sweet corn - 1 portion of pasta, tomato based sauce and cheese - 1 peach - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 orange - Portion of lettuce and chicken - Coleslaw - Sweet corn - 2 sausages - 1 low fat strawberry yoghurt - 1 portion of lasagne - 1 portion of salad - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 large bowl of muesli, honey and milk - 1 portion of roast chicken - 2 potatoes - broccoli - carrots - 1 sausage - 1L of Cordial - Water 	<ul style="list-style-type: none"> - 2 X Weet-bix and Milk - 1 large bowl of muesli, honey and milk - 2 pieces of garlic bread - 1 portion of chicken and mushroom pasta with creamy sauce - 1 portion of salad - 1L of Cordial - Water
Protein:	40g	36g	41g	37g	36g	39g	40g
Carbohydrate:	310g	300g	320g	270g	290g	270g	300g

Name: !

Date: 09.03.10

Time: 3.45-4.55

Training session / type: Weights

Venue: School, Gym

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Shoulder still sore however worked through this

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

I did not adapt my session

Evaluation:

Really good session for which I was highly motivated for and really enjoyed. As a result I was very focused. I concentrated on technique of lifts ensuring quick powerful muscular contraction.

Name:

Date: 11.03.10

Time: 2.45-3.45

Training session / type: Weights

Venue: School Gym

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Shoulder still causing problems

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Removed right shoulder press from exercises

Evaluation:

Good session highly motivated and felt ready and up for heavy exercise. All exercises felt good that I completed however shoulder injury still painful when completing some exercises.

Name:

Date: 11.03.10

Time: 3.45-5.55

Training session / type: SAQ

Venue: School Sports Hall

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No specific injuries, legs were feeling slightly better in less pain with knees though still tight calves

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Evaluation:

Having just completed a weights session I thought this session could be challenging however my energy levels were relatively high and I felt fairly fresh. I enjoyed this session and after talking over technique with Miss Salter previously I concentrated on technique and as a result thought I completed exercises at greater speed. I enjoyed this SAQ session.

Name:

Date: 12.03.10

Time: 1.45-2.45

Training session / type: SAQ

Venue: School, Gym

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

No specific difficulties or injuries

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Evaluation:

Again focused highly on technique this session, enjoyable though sore lower body muscles to an extent and shoulder still causing problems

Name:

Date: 16.03.10

Time: 11.10-12.20

Training session / type: SAQ

Venue: School Sports Hall

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Had netball session after so shortened cool down

Mental Approach	Rating: 1-10	Difficulties / Injuries: Sore left knee, but no particular injuries felt
Motivation:	1 2 3 4 5 6 7 8 9 10	
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10	
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10	
Energy Levels:	1 2 3 4 5 6 7 8 9 10	

Physical	Rating: 1-10	Adaptations: I did not have to adapt this session at all
Lower Body:	1 2 3 4 5 6 7 8 9 10	
Upper Body:	1 2 3 4 5 6 7 8 9 10	
Cardiac:	1 2 3 4 5 6 7 8 9 10	
Overall Feeling:	1 2 3 4 5 6 7 8 9 10	

Evaluation:

Effective session, again concentrating on technique but trying hard to implement more speed into exercises. I enjoyed this session, I worked hard and concentrated hard on fast feet and footwork patterns.

Name: .

Date: 16.03.10

Time: 3.45-4.50

Training session / type: Weights

Venue: School Gym

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A inside

Warm Up: Completed

Cool Down: Completed – additional stretching

Mental Approach	Rating: 1-10
Motivation:	1 2 3 4 5 6 7 8 9 10
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10
Energy Levels:	1 2 3 4 5 6 7 8 9 10

Difficulties / Injuries:

Right shoulder was sore and causing pain in some exercises

Physical	Rating: 1-10
Lower Body:	1 2 3 4 5 6 7 8 9 10
Upper Body:	1 2 3 4 5 6 7 8 9 10
Cardiac:	1 2 3 4 5 6 7 8 9 10
Overall Feeling:	1 2 3 4 5 6 7 8 9 10

Adaptations:

Removed right shoulder lifts, and bicep curls

Evaluation:

I was very motivated, determined and focused for this session, I felt it went well, frustrated about my shoulder but just removed the activities which really obviously directly impacted and caused pain, therefore did not limit my session very much.

Name:

Date: 18.03.10

Time: 4.00-5.00

Training session / type: Weights

Venue: School Gym

Mesocycle: 2

Microcycle: 4

Weather conditions: N/A

Warm Up: Completed

Cool Down: Completed

Mental Approach	Rating: 1-10	Difficulties / Injuries: Very tight hamstrings from match and training on Wednesday. Sore right shoulder
Motivation:	1 2 3 4 5 6 7 8 9 10	
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10	
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10	
Energy Levels:	1 2 3 4 5 6 7 8 9 10	

Physical	Rating: 1-10	Adaptations: Reduced the number of sets of hamstring curls to 2 as cramping causing pain. Removed right shoulder press
Lower Body:	1 2 3 4 5 6 7 8 9 10	
Upper Body:	1 2 3 4 5 6 7 8 9 10	
Cardiac:	1 2 3 4 5 6 7 8 9 10	
Overall Feeling:	1 2 3 4 5 6 7 8 9 10	

Evaluation:

Good session, some lifts felt easy in comparison to others, suggesting greater improvement in some areas than others. This was my last weights session before testing and I enjoyed it and was highly motivated, though frustrating I had to remove shoulder press and hamstring curl sets again.

Name:	Date: 19.03.10	Time: 4.00-4.45
Training session / type: SAQ		Venue: School, Sports Hall
Mesocycle: 2	Microcycle: 4	Weather conditions: N/A inside
Warm Up: Completed (additional stretching)		Cool Down: Completed

Mental Approach	Rating: 1-10	Difficulties / Injuries: Sore and tight hamstrings and calves.
Motivation:	1 2 3 4 5 6 7 8 9 10	
Focus / Concentration:	1 2 3 4 5 6 7 8 9 10	
Attitude / Dedication:	1 2 3 4 5 6 7 8 9 10	
Energy Levels:	1 2 3 4 5 6 7 8 9 10	

Physical	Rating: 1-10	Adaptations: No adaptations specifically, reduced the number of sets of some exercises which were causing pain.
Lower Body:	1 2 3 4 5 6 7 8 9 10	
Upper Body:	1 2 3 4 5 6 7 8 9 10	
Cardiac:	1 2 3 4 5 6 7 8 9 10	
Overall Feeling:	1 2 3 4 5 6 7 8 9 10	

Evaluation: Overall a good session, having to reduce some sets of exercises that were painful was frustrating. Concentrated on adding speed whilst ensuring technique was sound.
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Adaptations and changes I made throughout my programme to planned training sessions:

Throughout my programme at certain times I adapted my training: after Microcycle 1, I removed sprint/interval training from my programme, as this training placed increased pressure on my knees, causes tight lower leg muscles and cramping. It was causing me pain, and as a result negatively impacting upon my ability to perform in other training and matches and complete my SAQ and weights/resistance training correctly. I took this decision as I believe that the sprint training was only impacting upon me in a bad way, the benefits I was gaining from it were outweighed by the negative side effects that I received. Therefore I removed the sessions which resulted with me completing 2 SAQ sessions, and 2 weights sessions per week for the rest of the programme (microcycles 2,3 and 4).

Injuries of both my knees and the additional injury to my shoulder meant that I had to individually adapt many sessions throughout the programme, which has been recorded in each individual session evaluation recording sheet.

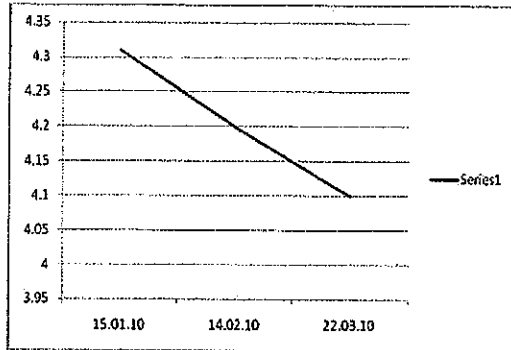
REVIEW & EVALUATION

Test Results and Graphs:

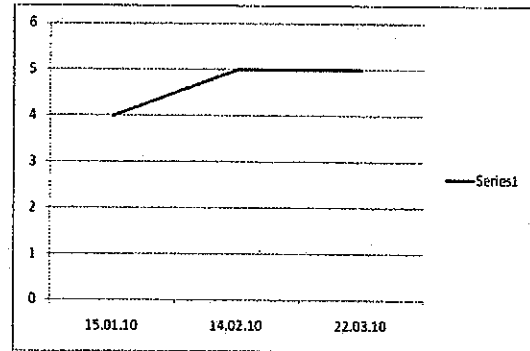
Test:	Beginning of Macrocycle: 15 th January	End of Microcycle 2: 14 th February	End of Microcycle 4: End of Macrocycle 22 nd March	Overall % change/ improvement:
Flying 30m:	4.31 seconds	4.20 seconds	4.10 seconds	4.87%
10m sprint:	2.5 seconds	2.3 seconds	2.0 seconds	20%
Sergeant Jump:	43cm	46cm	50cm	16.78%
1 Rep Max:				
Leg Press:	10 plates	13 plates	15+ plates	50%
Bench Press:	4 plates	5 plates	5 plates	25%
Seated Row:	13 plates	15 plates	20+ plates	53.85%
Hamstring Curl:	2 plates	2 plates	4 plates	100%
Cable Cross Flys:	3 plates	3 plates	4 plates	33%
Bicep Curl:	Left 10kg, Right 12kg	Left 12kg, Right 12kg	Left 12kg, Right 14kg	Left 20%, Right 16%
Shoulder Press:	Left 10kg, Right 12kg	Left 12kg, Right 12kg	Left 12kg. Couldn't test right	Left 20%. Right N/A
Lats Pull Down:	5 plates	6 plates	6 plates	20%
Leg Extension:	5 plates	5 plates	8 plates	60%
Tricep Pull down with rope:	5 Plates	7 plates	8 plates	60%
Fat %	17%	Did not measure	15%	11.78%
Weight	65.8kg	Did not measure	67.6kg	2.74%

Below are graphs I created to show my improvement of each individual tested element in order to allow me to visually see and assess my improvement. The 'series1' line is the indication of the improvement or steady state of my performance in the tests.

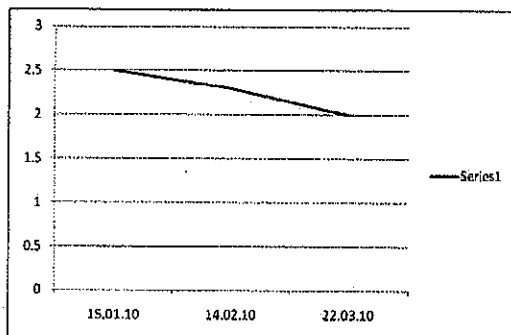
Flying 30m Graph:



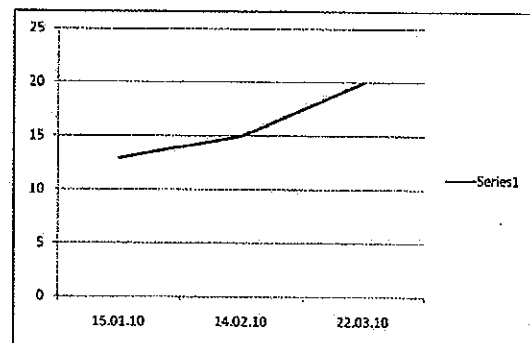
Bench Press:



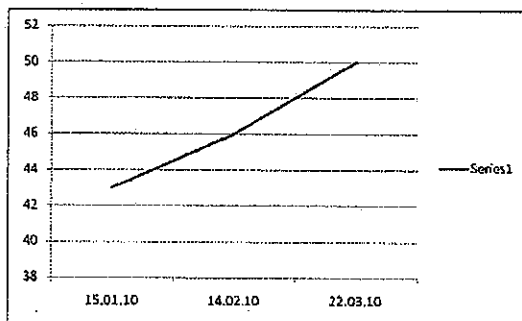
10m Sprint:



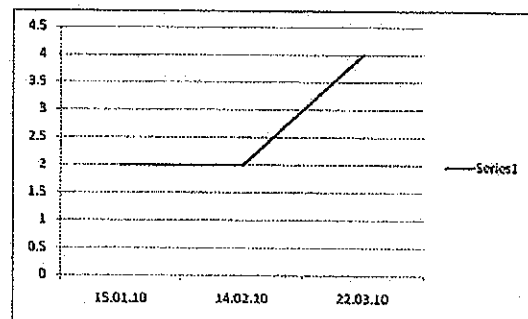
Seated row:



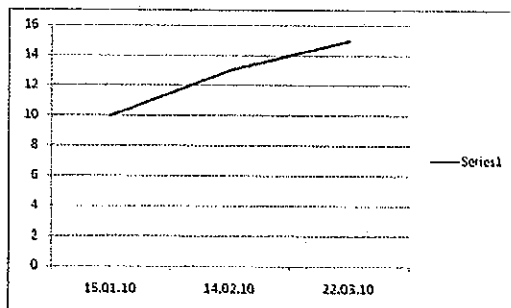
Sargent Jump:



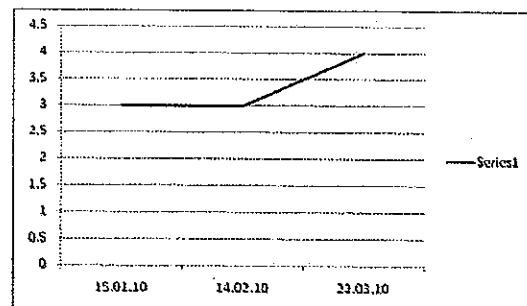
Hamstring curl:



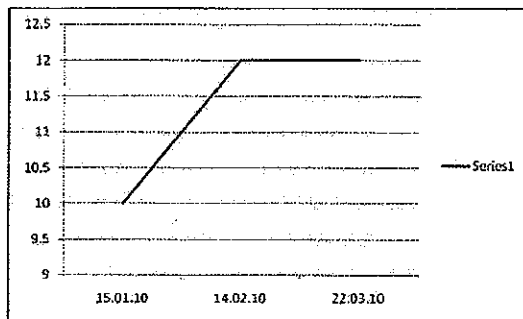
Leg Press:



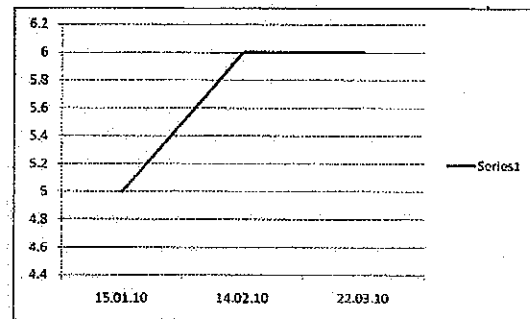
Cable Cross Flys:



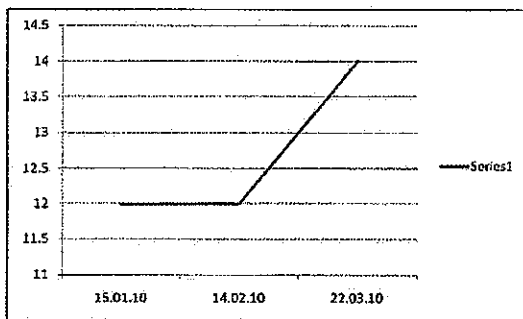
Bicep Curl (left):



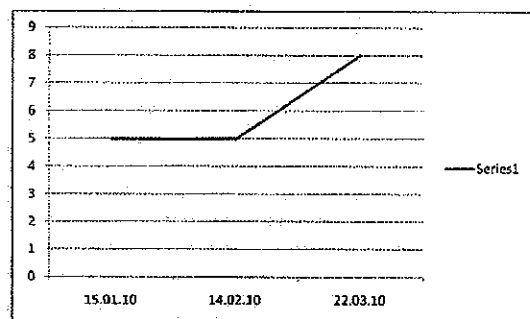
Lats Pull down:



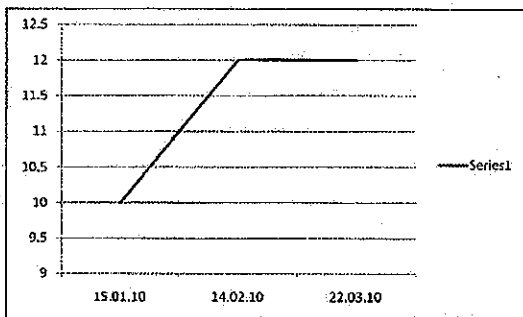
Bicep Curl (right):



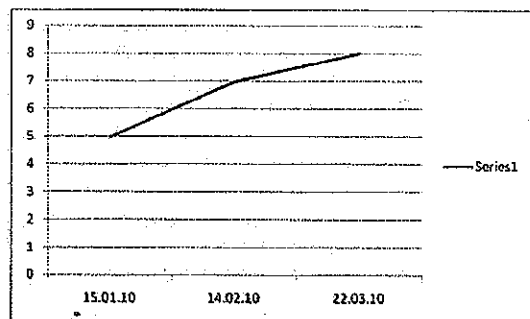
Leg Extension:



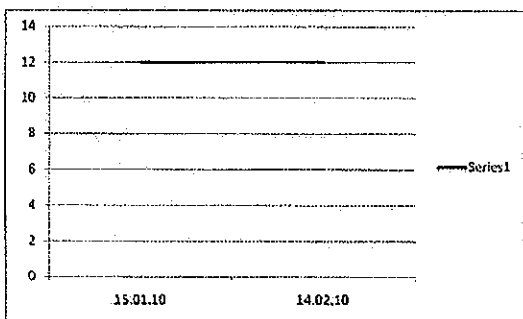
Shoulder Press (left):



Tricep Pull down with rope:

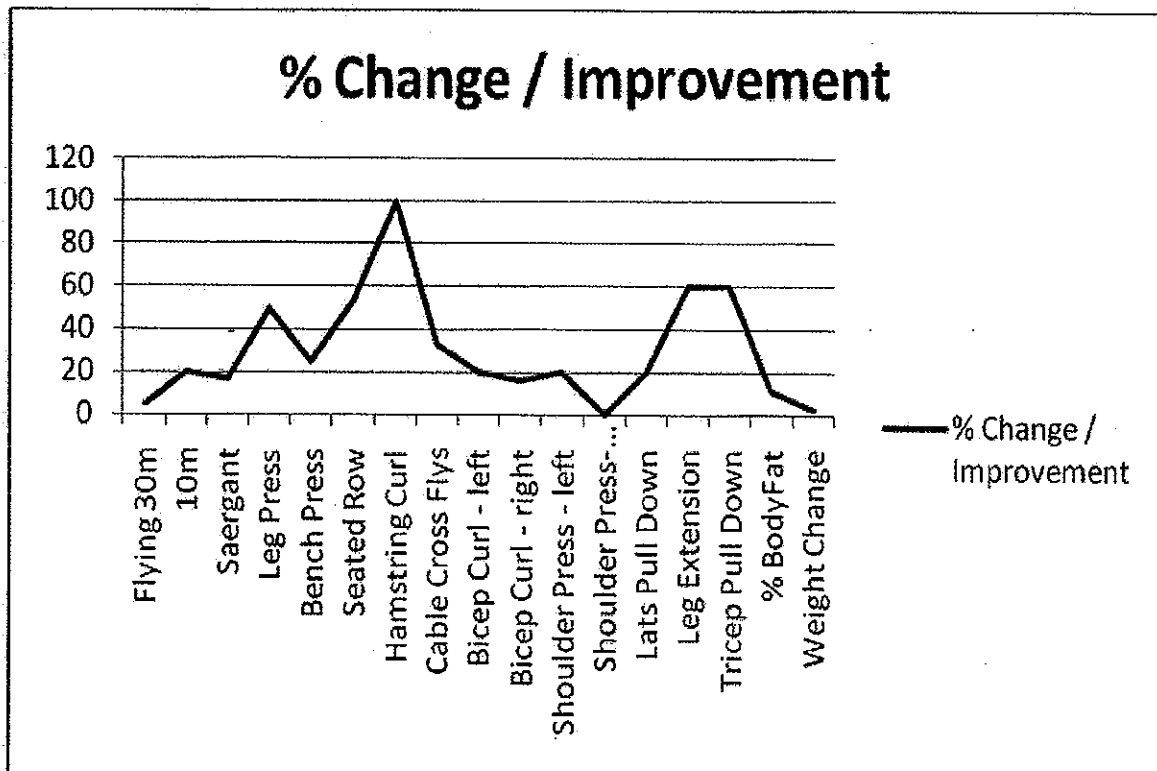


Shoulder Press (right):



Below is a graph showing my overall percentage change and improvement in each individual test ranked against each other. My data therefore indicates that I made the greatest improvements in the order of:

1. Hamstring curl
2. Leg extension, Tricep Pull Down
3. Seated Row
4. Leg press
5. Cable Cross Flys
6. Bench press
7. 10m Sprint, Left Bicep Curl, Left Shoulder press, Lats Pull Down
8. Seargent Jump
9. Right Bicep curl
10. Percentage body Fat
11. Flying 30m
12. Change in body weight



Review & Evaluation:

The aim of my 8 week development plan was to improve my acceleration and power. During this time period I did so, as my test results prove. Overall my development plan was successful- all of the areas that I tested improved to some extent, although some more than others.

I completed nearly all my sessions; there was just one session that did not complete during the time and I was forced to replace this one sprint training session with a weights session by injury. My timetable worked very well with my scheduled times, and then possible training times, these came in very usefully and I often used them due to factors such as general studies lectures, meetings, requirements to cover lessons, matches, injury reducing my ability to complete some sessions at initially planned times.

I had explored my diet and the amount of protein and carbohydrate I was consuming prior to commencing my programme. I was therefore aware of the need to up the amount of substance, in particular protein that I ate during my plan. I accurately recorded my consumed substances and stuck to the dietary modifications I found I needed to make through my research, though at school my control over the amount and substance that I ate was somewhat limited. I found it extremely hard to get the right amount of protein, even though I increased the amount of chicken, prawns and other high protein foods I ate. I briefly considered the idea of taking additional protein through shakes, however there are cost implementations of doing this and I did not feel it was necessary for me to do so in order to make improvements as my weights programme was a foundation programme concentrating on power and not aimed at increasing muscular hypertrophy. Having said this I made sure I paid specific attention to increasing and ensuring a consumed a maximum amount of protein for growth and repair to damaged muscles as both weights/resistance training and the concentric movements associated with SAQ training increased the need for protein. I also carefully monitored my carbohydrate consumption; this was a vital fuel for me as my training relied on glycogen as an energy source as my training was high intensity. Within my diet I attempted to constantly ensure that I ate at the right times to provide me with the correct balance to fuel my training and replaced any used fuel and provided protein, whilst maintaining hydration.

I applied the principles of training successfully to my programme, though I feel I should have paid more attention to overload and progression with some aspects of my plan. Though I ensured I warmed up and cooled down correctly for every session, I was injured for a relatively large amount of my programme, mainly through overuse injuries, meaning some sessions I could not complete to my full capacity, which was not only frustrating but also will have had an impact upon my test results. I overloaded my body to a too greater extent perhaps by not properly taking into account the large amount of sport in addition to my development plan sessions which I was undertaking, indicated by my timetable. It may have been more effective if I had planned fewer sessions per week and made them more intense, to give my body more time to recover. I did my best in order to ensure I always had one rest day a week (saturday) and spread my sessions the best I could across the two week period and if I was to redo my development plan I would consider this. Ideally I would be able to complete my plan at a time when I had total control of the other training that I did, not at peak season for both school and south netball however due to the circumstances and restrictions of the school year structure this was not possible. I feel I could have progressed my SAQ session to a greater extent, however I concentrated highly on technique and due to my knee injuries I did not

want to over stress my body. I attempted one session with the initially increased intensity however I did not feel it was to be beneficial as injury would overall and restrict potential increased improvement. Tedium was a factor which I thought would play a larger role in my development plan, I had initially planned to have a 'training buddy' who was completing similar session to me in order to keep me motivated however due to timetable restrictions and injuries of others this was not possible. The majority of my SAQ sessions were taken place alone and during most of my weights /resistance sessions were completed with others working in close proximity. I however did not feel particularly influenced by others, I was individually highly motivated and did not need others to motivate me or avoid feeling bored with my programme. I feel this may be because acceleration and power was an aspect of my game which I really wanted to improve so I was prepared to do the training in order to get good results. Injury did however greatly frustrate me throughout my development plan, and de-motivated me to an extent but I worked around the injuries of both my shoulder and knees and successfully adjusted and adapted my session in order to maximise the time I had given the restrictions of injury.

I was restricted slightly by time and at times facilities through the availability of the sports hall for SAQ sessions, however as previously mentioned I managed to work around these restrictions and they did not impact upon my programme to a great extent. The equipment available at school was ideal for what I required; both fixed and free weights were readily available in the gym and the correct ladders, huddlers, medicine balls and cones were also easily accessible at school. I took a rest week from the 15th to the 21st of July as this was half term; initially this decision was due to the fact that I did not have the equipment at home to complete SAQ sessions however I feel this worked out very well as my body needed time to rest and cover over half term and if I had not used this week to rest I would have been even more negatively affected by injury.

I feel that the clear cut structure of my sessions, the planning and time management of sessions, periodisation, motivation, diet adjustments are all aspects of my development plan that went well. The main element that did not go well was the injury problems I faced during my plan, as discussed earlier. Therefore if I was to go back and redo my plan I would pay more attention to this when planning and attempt to reduce the chances of injury, as both are aggravated by overuse I would more strongly consider and analyse the need for rest days and periods in order to recover and perhaps undertake my plan at a time when there are less demands on my body due to other commitments.

I feel I have a good understanding of all the scientific knowledge and concepts explored research and implemented within my development plan. I feel this understanding and ability to apply these learnt concepts and skills is illustrated by the improvements I made throughout my plan, as well as my analysis post- development plan. I initially found the recording of diet and sessions very interesting allowing me to discover habits that I had, such a following a relatively similar daily consumption routine and the times in a week when my pain levels where high and energy levels were low.

My testing results show improvement in all areas which I tested for, which is evidence for the fact that my development plan did work and improve my power and acceleration, as all the test I completed related to these aspects in some way. My percentage change graph indicates that I made the biggest gains in one rep-max of the hamstring curl, leg extension and tricep pull down; in order to improve my acceleration and sergeant jump before the programme I felt there was a need to

improve the power in my lower body which I achieved by completing my programme. Therefore I am very pleased I made these improvements and this shows that the areas I targeted during my programme were improved upon. The areas in which I improved to the least extent were change in percentage body fat, flying 30m and change in body weight; these are all areas and test which were least specific to my programme and I did not expect to see great gains in. I will have very rarely if at all used fat as a source of energy during my programme as all my sessions were high intensity and fat is only used for an energy source at the later stages of low intensity activity as the oxidative ability to convert fat into energy is slow, though very efficient. My slight weight gain is due to muscular hypertrophy as a result of my weights / resistance training. My speed over a flying 30m did not improve dramatically however I did not expect this to improve greatly as my programme aimed to improve power and acceleration, not speed. The 'flying 30m' eliminates acceleration and tests pure speed once the athlete is running at full pace, due to my slight weight gain it is not surprising that my speed did not increase greatly and the validity and accuracy of timing may have influenced the data for this particular test. Therefore overall my results indicate that my development plan was successful and that I achieved my aim of improving power and acceleration.

My data and graphs indicate that in most areas I had a relatively constant improvement; the gains I made at 'mid programme' testing were similar to the gains made between this date and the final testing. The gains made by my sergeant jump, hamstring curl, seated row, cable cross flies, right bicep curl, flying 30metres, 10m sprint and leg extension were greater in the second mesocycle whereas the improvements made for the leg press, bench press, left bicep curl and shoulder press, right shoulder press, lats pull down, and tricep pull down with rope were greater in the first mesocycle. The rate of improvement in these tests declined and in some cases I even experienced a plateauing effect where in the second mesocycle I did not make any additional improvement in the individual test. This is likely to be due to the 'law of diminishing returns' where improvements are pronounced in the early stages of a programme and then lessen once a certain level has been achieved.

I have only been able to obtain data of national averages for the flying 30m, sergeant jump test and body fat percentage due to the specificity of each one rep max and my age and gender. For the flying 30m I began in the 'excellent' category for my sex and age and ended in the same (top) category. For the sergeant jump I began in the 'average' category for my age and sex and throughout my plan advanced into the 'above average' category. I am considered a relatively large amount below average in body fat percentage, and am in the middle to lower end for body fat percentages of elite athletes. As I would expect a lot of netballers of my age who play at level I do to be in the top two categories for both the flying 30m and the sergeant jump and have a relatively low body fat percentage, I am pleased with my improvement and results compared to a national average.

The impact that this improvement has had upon my game is however subjective. I cannot provide an improvement through a personal best to 'prove' that my development plan was successful, as I don't compete in a sport which is based on measurements e.g. time or distance. However I have felt that the gains made by completing my development plan have had a positive impact upon my performance. In the past two south-regional games I have played in I have performed well as well as performing consistently well for school, I believe that my gains in acceleration and power have allowed me to do so. This may be partially psychological and the belief of improvement has impact upon my confidence, which has improved my performance however I genuinely feel that improved

power and acceleration has meant I am able to get free from players easier and am making more interceptions up the court. There was a period when I first began my training sessions when I felt I was performing badly in both training and matches for School, Oxfordshire, South- Regional League, as a result I decided to removed my sprint / interval training and replace it with additional SAQ and resistance sessions as a response to this my performance quickly improved again. When reflecting upon the success of my development plan I feel that the overall improvements I have made have had a big positive effect upon my game as well as my ability train.

I have thoroughly enjoyed the planning and research, performing and recording and reviewing and evaluation processes of my development plan and I am extremely happy with the benefits I have reaped. I feel it has been a very effective and rewarding process whereby my knowledge and understanding of training and the large range of topics and concepts that surround and support it has improved greatly.

Coach's testimonial:

Below is a paragraph written by Kristy Floyd, 1st VII netball coach at Cokethorpe School who has watched me train and progress over the period of my development plan, a from of subjective evidence to show how my improvement in acceleration and power has positively effected my game:

'During the past ten weeks Suzy has undergone a specific development plan to improve her acceleration and power for her school and regional netball. I have noticed a significant difference in her performance in both of these areas. Due to these positive improvements I have been able to utilise Suzy in centre court positions which require not only a high level of fitness but definite changes of pace and power in order to get free from defenders.'

Mrs K Floyd

Netball Coach

Bibliography:

Web pages:

<http://www.brianmac.co.uk/>

<http://www.brianmac.co.uk/flying30.htm>

<http://www.brianmac.co.uk/sgtjump.htm>

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<http://www.ausport.gov.au/ais/sssm>

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<http://www.sportsinjuryclinic.net/cybertherapist/stretching/allstretches.php>

<http://www.brianmac.co.uk/eval.htm>

Books:

'Edexcel A2 PE'- Mike Hill, Colin Maskery and Gavin Roberts